



## **MEGAPESCA Lda**

**PROJECT FISH / 2003 / 02**

**FRAMEWORK CONTRACT FOR PERFORMING EVALUATIONS,  
IMPACT ANALYSES AND MONITORING SERVICES IN THE CONTEXT  
OF FISHERIES PARTNERSHIP AGREEMENTS CONCLUDED BETWEEN  
THE COMMUNITY AND NON-MEMBER COASTAL STATES**

**SPECIFIC AGREEMENT NO 31: MOZAMBIQUE**

**EX-POST EVALUATION OF THE CURRENT PROTOCOL TO THE FISHERIES  
AGREEMENT BETWEEN THE EUROPEAN COMMUNITY AND THE REPUBLIC OF  
MOZAMBIQUE, AND THE ANALYSIS OF THE IMPACT OF THE FUTURE PROTOCOL  
ON SUSTAINABILITY, INCLUDING *EX-ANTE* EVALUATION**

**FINALREPORT**

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**EXCHANGE RATES USED IN THIS REPORT**

Year	2001	2002	2003	2004	2005
Currency	Average Annual Exchange Rate				
MZM Metical	10,000	10,000	10,000	10,000	10,000
EURO	0.5584	0.4564	0.3793	0.3537	0.3458
USD	0.6228	0.4876	0.3393	0.2864	0.2758
MZM/EURO	17,909.03	21,911.21	26,365.42	28,276.12	28,922.32
MZM/USD	16,055.31	20,507.62	29,473.45	34,918.66	36,262.08

SOURCE : InforEuro <http://europa.eu.int/comm/budget/inforeuro/index.cfm>

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**ACRONYMS USED**

ACP	Africa, Caribbean, Pacific
AfDB	African Development Bank
AfDB	African Development Bank
CCRF	1995 FAO Code of Conduct for Responsible Fisheries
CITES	Convention on the International Trade in Endangered Species
CPUE	Catch per unit of effort
CPUE	Catch Per Unit Effort
DANIDA	Danish International Development Assistance
DG SANCO	Directorate General of health and Consumer Protection
DNAP	Direcção Nacional de Administração Pesqueira
DNEP	Direcção Nacional de Economia Pesqueira
DPIP	Delegação Provincial de Inspeção do Pescado
EBDIT	Earnings before depreciation, interest and taxes
EC	European Commission
EEZ	Exclusive Economic Zone
EU	European Union
FA	Fisheries Agreement
FAD	Fish aggregating device
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organisation of the United Nations
FFP	Fundo Fomento Pesqueiro
FFP	Fondo Fomento Pesquero
FL	Fisheries Law
FPA	Fisheries Partnership Agreement
GDP	Gross domestic product
GEF	Global Environment Facility operated by UNDP
GoM	Government of Mozambique
GRT	Gross Registered Tons
HDI	Human Development Index
ICEIDA	Icelandic International Development Assistance
IDPPE	Instituto de Desenvolvimento das pescas de Pequena Escala
IFAD	International Fund for Agricultural Development
IIP	Instituto de Investigação Pesquera
IMF	International Monetary Fund
IMO	International Maritime Organisation
INIP	Instituto Nacional de Inspeção de Peixe
IUCN	World Conservation Union
IUU	Illegal, Unregulated, Unrecorded.
IUU	Illegal Unregulated and Unreported
LDC	Least Developed Country
MADER	Ministério de Agricultura e Desenvolvimento Rural
MARPOL	International Convention for the Prevention of Pollution from Ships
MCS	Monitoring, Control and Surveillance
MIC	Ministério de Indústria e Comercio
MICOA	Ministério para a Coordenação da Acção Ambiental

MoF	Ministry of Fisheries
MoU	Memorandum of Understanding
MSY	Maximum Sustainable Yield
MTEF	Mid-term Expenditure Framework
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency For Cooperation and Development
NORAD	Norwegian International Development Assistance
PARPA	Poverty reduction strategy
QNP	Quirimbas National Park
RAMSAR	International Convention on Wetlands
RFO	Regional Fisheries Organisation
SADC	Southern African Development Community
SOLAS	International Convention for the Safety of Life at Sea
SWIO	South Western Indian Ocean
TAC	Total Allowable Catch
UN	United Nations
UNCLOS	1982 United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
VA	Value Added
VMS	Satellite-based Vessel Monitoring System
WB	World Bank
WIO	Western Indian Ocean
WPTT	Working Party on Tropical Tunas
WWF	World Wide Fund for Nature

## EXECUTIVE SUMMARY

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1. This report describes the findings and recommendations of a study to evaluate the Fisheries Agreement and a Protocol between the European Union (EU) and the Republic of Mozambique, and a forward analysis of the impacts of future protocol, including ex-ante evaluation of potential renewal scenarios. The study was commissioned by the Directorate General of Fisheries of the European Commission under a framework contract “for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states” operated by a consortium comprising Oceanic Développement (France), Poseidon Aquatic Resource Management (UK) and Megapesca Lda (Portugal).
2. The study was undertaken by a team comprising Team Leader/Evaluation Specialist, Institutional and Socioeconomic Specialist, Fisheries Economist, Fisheries Resources specialist and Fisheries Law Specialist. Team Members visited Mozambique during the first quarter of 2006, and held discussions with the Ministry of Fisheries, and staff of the Ministry of Environment, Ministry of Economy and Finance and their associated institutions. The Evaluation Team also met with European Commission staff, and with EU fishery sector stakeholders in Portugal and Spain.
3. The Republic of Mozambique is located on the east coast of Southern Africa. It has an area of 801,590 sq km. It is a Less Developed Country (LDC) with a GDP of about US\$220/capita in 2002. With a population growth rate believed to be around 2.3% (2.6% in 2000), the country's population was estimated (without taking into account the impact of HIV/AIDS) to be 19.3 million in 2005. The UNDP Human Development Index (HDI) places Mozambique in last position among the 14 SADC countries and 168th out of 177 countries overall.
4. Mozambique's economy has shown constant and rapid growth since the cessation in 1992 of a long running and costly civil war, following independence from Portugal in 1975. Successful elections have been held in 1994, 1999 and 2004. Following its victory in the December 2004 legislative and presidential elections, politics remains dominated by FRELIMO, the former independence movement. Despite the stable political environment, public sector and financial reforms are progressing only slowly, and the country remains highly dependent on foreign aid to make up budget deficits. The country suffered from severe flooding in 2000 and 2001, with a heavy loss of life and destruction of infrastructure.
5. The economy is dominated by transport and transit services, exports of hydro-electricity to neighbouring countries and aluminium smelting. Mozambique's tangible exports comprise aluminium, shrimp, cashew nuts, sugar, citrus, cotton, manufactured products and timber. Although the share of agriculture in GDP has decreased from 30% to 23% during the period 1996 to 2004, 80% of the population is still rurally located.
6. Although the investment code treats national and foreign investors equally, the environment for investment and business is not favourable. Bureaucratic and corrupt procedures cause delays and increase costs. The judicial system is paralysed, making enforcement of contracts and use of land as collateral impossible. Rigid employment rights provide disincentives for employment. Investment is further inhibited by a lack of physical and commercial infrastructure. The Government is addressing some of these issues by creating incentives in the form of duty free export processing zones and tax holidays, but the IMF and the donor community is maintaining the pressure for deeper and more fundamental structural reform.
7. National development is guided by the poverty reduction strategy (PARPA) which focuses on improvements in public services in relation to education, health, agriculture and rural development, basic infrastructure, good governance and macroeconomic and financial management. As an ACP country, the 9th European Development Fund is supporting the National Indicative Programme with M€329, which includes measure coherent with the PARPA. Enhanced

trade opportunities are foreseen to be delivered by a regional Economic Partnership Agreement to be signed between SADC countries and the EU, and due to commence in 2008.

8. Fisheries administration, management and development responsibilities fall within the mandate of the Ministry of Fisheries and its subsidiary institutions and directorates. Fisheries policy is only weakly defined and stagnant. Policy development capacity is virtually non-existent, although some consultative mechanisms have been introduced. Implementation capacity in terms of fisheries information and research, national fisheries development, fisheries management and monitoring control and surveillance is weak. Hygiene controls however are considered equivalent to EU requirements, and Mozambique can export fishery products, including those from aquaculture, to the EU.
9. Policy with respect to the exploitation of the national resources is to favour national operators (including joint ventures) where there is capacity. Foreign fisheries access to deepwater shrimp, tuna and large pelagic fish is subject to licences arrangements. National industrial and semi-industrial vessels operating under national and joint venture management exploit the shallow water shrimp fishery. A clear policy in favour of development of small scale fisheries is in place. The legal framework for the sector comprises an inadequate and outdated Fisheries Law, and a new Fisheries Regulation which is concordant with Mozambique's international commitments.
10. The main domestic fisheries stakeholders are some 100,000 subsistence and small scale fishers in coastal communities. An estimated 8,000 are employed in semi-industrial and industrial fisheries (comprising 192 vessels in 2005, mainly engaged in shrimp trawling). Of these, 80 freezer trawlers are approved to supply the EU market. There are 20 fish processing establishments (16 approved for the EU market and three of which are linked to shrimp aquaculture enterprises). Inland fisheries are important on Lake Cahora Bassa, where semi-industrial fishing supplies the fish drying and regional export trade with c.12,000 tonnes/year of kapenta.
11. The national marine fishery focuses on coastal resources, producing about 100,000 tonnes per year from the artisanal fishery and 32,000 tonnes from the industrial fishery. The latter includes a range of shrimp species, small pelagic fish, and demersal fish. Annual fish consumption is estimated to be 7kg/capita; except in coastal and lake regions fish appears to make only a modest contribution to the national diet.
12. Foreign industrial fleets fishing in Mozambique comprise demersal trawl, purse seine and surface longline vessels targeting deepwater shrimp, tuna, swordfish and shark resources. Production is estimated to be about 17,000 tonnes in 2004, but catch reporting from the offshore fisheries is not consistent.
13. Access arrangements for foreign flagged vessels are either under the EU-Mozambique Fisheries Agreement, or private licences. Foreign operators include some 35 EU and 19 non-EU purse seiners (the latter mainly Seychelles and Taiwanese flagged) and 143 non-EU surface longliners (mainly operating under Taiwanese and Japanese flags). The Mozambique EEZ is also thought to be exploited by a sustained level of IUU fishers.
14. The principal fisheries resources of interest to industrial fisheries are shallow water and deepwater shrimps and large pelagic fishes (yellowfin and skipjack tunas, swordfish and sharks). There is evidence that the shallow water shrimp stocks are exploited at unsustainable levels, whilst the deepwater shrimps are not fully exploited, largely due to the high cost of exploitation and the limited market for the species concerned. There is no comprehensive data on the conditions of the other demersal resources. Migratory resources of tunas and other large pelagic fish in the South West Indian Ocean are generally fully exploited. Particular concern has been expressed that bigeye tunas may be exploited at unsustainable levels, especially in fishing with FADS; the regional fisheries organisation, the Indian Ocean Tuna Commission, is also concerned over possible localised depletion of swordfish, and there is emerging evidence of unsustainable levels of catches of sharks.
15. Mozambique has an extensive and largely unspoilt marine and coastal environment, with several endangered species of marine mammals and reptiles present. The country is home to the

endangered dugong. There are important breeding grounds for turtles in the north of the country. Two marine protected areas have been created in the north of Mozambique, (the Bazaruto Archipelago and the Quirimbas National Parks) with World Bank and GEF support, with the aim to protecting threatened marine ecosystems. The parks are adjacent to important fishing grounds.

16. The current protocol is the first protocol since the renewal of the Fisheries Agreement between the EU and Mozambique in 2004. It entered into force on 1 January 2004 and provides fishing opportunities for 1,000 tonnes/year of deepwater shrimp (plus permitted bycatches), and access for 35 tuna purse seiners and 14 surface longliners. The reference catch of tuna under the Agreement is 8,000 tonnes. The duration of the protocol is for a period of 3 years, until 31 December 2006. The protocol is now in its third year.
17. The Agreement has been effective in providing fishing opportunities for an average of 35 EU purse seiners, and 12 EU surface longline vessels. The Agreement has not been effective in providing fishing opportunities for the EU trawl fleet since none of the deepwater shrimp opportunities have been utilised.
18. Catch data of vessels fishing under the agreement is available only for 2004. Only purse seine vessels fished within the EEZ, but they have never submitted catch returns directly to the Mozambique authorities, as required by the Agreement. Catch returns have however been submitted via the vessels' Member States, an improvement to the previous situation when these vessels were operating with private licences. Surface longline vessels did not fish in the EEZ in 2004 and 2005, although they drew licences. Vessel operators indicate that fishing may take place in 2006. However, there is no interest from EU operators in the deepwater shrimp fishery, where high exploitation costs and limited markets undermine the viability of this fishery for EU vessels.
19. Catches under the Agreement have provided supplies of tuna to the EU market averaging an estimated 8,753 tonnes/year, valued at €6.7 million (although this value is likely to have fallen during the later years of the Protocol). The catches in 2004 were unusually high (12,060 tonnes) due to the presence of free swimming schools of yellow fin in the northern part of the Mozambique Channel. Early suggestions are that 2005 has reverted to a more normal pattern, and the consultants have estimated that catches may have fallen to about 5,446 tonnes.
20. The Protocol has provided a financial compensation to Mozambique averaging €4.1 million/year plus licence fees and additional payments averaging €0.4 million over the two years. All of the compensation has been directed towards targeted actions in support of MCS, fisheries research, institutional development, training and quality control. Payments of the financial compensation are up to date, but the submission by the Ministry of Fisheries of the 2005 annual reports on the use of the funding for targeted actions is delayed.
21. The costs and benefits of the Agreement are not equally shared. Although most of the direct value added of €3.0 million/year created by the Agreement, falls to the Community. Eightyfive percent of the compensation paid reflects the inclusion of unutilised shrimp fishing opportunities. Therefore the Agreement has been implemented by the First Protocol at a net cost to the Community of €1.2 million /year. The Agreement may be regarded as having negative efficiency, with a cost advantage of only 0.7. Of the income provided to Mozambique, 94.7% was provided by public funds, and 5.3% from the vessel owners, in the form of licence fees. The Agreement has sustained about 14 Community jobs and 38 in ACP countries (but none in Mozambique).
22. The impacts on Mozambique have been almost exclusively limited to the financial income from compensation and licence fees (average €4.5 million/year). These have made a significant contribution (16%) towards the average annual operating and investment budget of the Ministry of Fisheries. However only 42% of the funds from 2004 were spent on the programmed targeted actions. Furthermore in the key area of fisheries monitoring control and surveillance (MCS), where Mozambique has benefited from the assistance of an EDF funded SADC regional project, the rate of disbursement was only 15%. The treatment by the Ministry of Fisheries of unspent funds has not complied with Treasury rules. At least 5% of the targeted action funds are allocated to activities other than those specified in the Agreement. The relevance of the financial

compensation payments made appears to have been compromised by the weak fisheries policy framework and implementation capacity of the partner country.

23. The Agreement has not been effective in enhancing supplies of fish to Mozambique. Although some activity in vessel services may start in the near future, neither has the agreement been effective in stimulating the development of the Mozambique fishery sector. The Agreement has contributed neither to employment, poverty alleviation nor food security in the partner country.
24. With regard to sustainability, the relatively low EEZ catches under the Agreement, in relation to the total catches of tuna and large pelagic resources from the Indian Ocean fisheries (corresponding to 0.5% of the total catch of tuna) means that the Agreement has had negligible impacts on these stocks. Since there have been no EEZ activities relating to surface longliners, the Agreement has not impacted on the condition of swordfish and shark stocks, regarding the stocks of which the IOTC has expressed some concerns. Similarly there have been no impacts on mortality of several endangered species of marine turtle, associated with the Mozambican EEZ. However, the Agreement has contributed indirectly to the regional presence of these vessels and there may be some such interactions if these opportunities are exploited during the remaining duration of the Protocol.
25. Sustainability in the exploitation of the tuna and large pelagic resources under the Agreement is promoted by the Community membership of the IOTC, ensuring that management recommendations are implemented with respect to EU vessel fishing. However, Mozambique's non-participation in this organisation reduces opportunities for scientific research, catch reporting and information sharing, and limits potential for further application of principles of responsible fishing should the Agreement cease to operate in future. In terms of the contribution to responsible fishing, the Agreement has resulted in improved catch reporting by EU vessels operating in the Mozambique EEZ. Whilst the Agreement has supported targeted actions directed at fisheries research and fisheries MCS, partner country capacity in these areas remains weak. There are effectively no national fisheries management plans in place other than for shrimp. Despite the support of the targeted action funds and the EDF SADC MCS Project for the development of MCS capacity, Mozambique still has no effective surface MCS means, undermining the future sustainable exploitation of EEZ resources.
26. In conclusion, the Agreement has been relevant for EU purse seine and to a certain extent, the surface longline fleet, but not for the EU trawler segment. The non-uptake of deep-water shrimp opportunities has significantly reduced the efficiency of the agreement. The Agreement has not been implemented efficiently, due mainly to the inclusion of shrimp fishing opportunities, for which there is no demand from EU vessel operators due to the high exploitation cost and limited markets for the species concerned. The considerable potential benefits to Mozambique have been compromised by the lack of a clear fisheries policy framework, and weak implementation capacity, resulting in an ineffective application of targeted action funds. Neither the Community nor the partner country can be regarded as having gained the optimal benefits potentially available from the first protocol under the Agreement.
27. However, the Agreement is found to be highly relevant and coherent with Community and policies in relation to fisheries (in relation to the CFP), development (in relation to the Cotonou Agreement, and EDF regional projects supported by the RIP and NIP) and trade in relation to a future SADC European Partnership Agreement. It is highly relevant to the partner country objective of maximising returns from EEZ fisheries which cannot be exploited by the national operators.
28. With respect to the future the parties will need to consider whether a new Agreement should include only the purse seine fishing and surface longline opportunities. These fishing opportunities in the Agreement are feasible, relevant, and can be sustainably exploited within the frame of IOTC recommendations. Crucially such an Agreement could continue to benefit Mozambique's fishery sector through a programme of supported measures within the frame of a Fisheries Partnership Agreement, albeit necessarily more limited than at present.

29. In terms of environmental sustainability it is highly desirable for an Agreement to be concluded, to ensure that EU and other vessels fishing within the EEZ of the partner country are equally subject to IOTC management recommendations. This is especially important in relation to bigeye tuna resources in the purse seine fishery (with FADs) and swordfish and sharks resources (and turtle bycatches) in the surface longline fishery. Furthermore the renewal of the Agreement would appear to provide means for supporting Mozambique's formal association with IOTC, thus promoting and extending the potential for responsible fishing within the region and ensuring an equal application of management measures in the Mozambique EEZ.
30. It is also recommended that the procedures for the financial disbursements set out in the Protocol should reflect the requirement for improved budgetary discipline in relation to the public sector fishery investments. This should include a requirement for disbursement of all funds to be channelled through the Treasury (CUT, Conta Única do Tesouro) and for funding in accordance with a formally agreed and programmed set of measures, in line with the principles of the Fisheries Partnership Agreement. The procedures followed should be coherent with the 2004 Memorandum of Understanding under the Joint Donor Programme for Macrofinancial Support, of which the European Community is a signatory.
31. The Priority partnership areas for consideration within a new Agreement employing FPA principles are a) continuing support for the strengthening of fisheries MCS capacity, in line with the SADC MCS Project objectives for Mozambique b) support for membership and formal active participation in IOTC either as a contracting or cooperating non-contracting party c) introduction of a new Fisheries Law and fisheries policy framework d) development of fisheries management plans for non-shrimp resources e) strengthened public sector financing and accountability, particularly in relation to the Fundo Fomento Pesquero and the preparation of a Mid-Term Expenditure Framework for the Ministry of Fisheries.

## SUMÁRIO EXECUTIVO

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1. Este relatório apresenta os resultados e recomendações de um estudo realizado para avaliar o Acordo de Pesca e o Protocolo entre a União Europeia (UE) e a República de Moçambique, bem como a análise dos impactos de um futuro protocolo, incluindo uma avaliação ex-ante de potenciais cenários de renovação. O estudo foi realizado por iniciativa da Direcção Geral das Pescas da Comissão Europeia, no quadro do contracto “realização de avaliações, análise de impactos e serviços de monitorização no contexto de acordos de parceria de pescas concluídos entre a Comunidade e Estados costeiros não-membros” operado por um consórcio constituído pela Oceanic Développement (França), Poseidon Aquatic Resource Management (RU) e Megapesca Lda (Portugal).
2. O estudo foi realizado por uma equipa composta pelo Chefe de Equipa / Especialista de Avaliação, Especialista Institucional / e Sócio-economia, Economista Pesqueiro, Especialista de Recursos Pesqueiros e Especialista de Legislação das Pescas. Membros da equipa visitaram Moçambique durante o primeiro quarto de 2006, tendo estabelecido reuniões com o Ministério das Pescas, pessoal do Ministério do Ambiente, Ministério da Economia e Finanças e instituições associadas. A Equipa de avaliação manteve também, contactos com pessoal da Comissão Europeia e com stakeholders do sector das Pescas da UE, em Portugal e Espanha.
3. A República de Moçambique está localizada na costa Este do sul de África, possuindo uma área de 801,590 km<sup>2</sup>. É um país em vias de desenvolvimento com um PIB de cerca de US\$220/capita em 2002. Com uma taxa de crescimento da população estimada de cerca de 2.3% (2.6% em 2000), a população do país foi estimada (sem ter em conta o impacto do HIV/SIDA) em 19,3 milhões em 2005. O índice de desenvolvimento humano da UNDP (HDI) coloca Moçambique na última posição entre os 14 países SADC e no lugar 168 entre um total de 177 países.
4. A Economia Moçambicana tem apresentado um rápido e constante crescimento desde a cessação em 1992 de uma longa e cara Guerra civil, no seguimento da independência obtida de Portugal em 1975. Eleições com sucesso foram realizadas em 1994, 1999 e 2004. No seguimento da sua vitória em Dezembro de 2004, nas eleições legislativas e presidenciais, a política permanece dominada pela FRELIMO, o ex-movimento de independência. Apesar do estável ambiente político, as reformas do sector público e financeiro progridem de forma lenta e o país permanece muito dependente da ajuda externa para compensar orçamentos deficitários. O país sofreu cheias graves em 2000 e 2001, com pesadas perdas de vidas e destruição de infra-estruturas.
5. A economia é dominada por serviços de transporte e transitários, exportações da hidroeléctrica para países vizinhos e fundição de alumínio. As exportações tangíveis de Moçambique consistem de alumínio, camarão, noz de caju, açúcar, citrinos, algodão, produtos manufacturados e madeira. Apesar da percentagem da agricultura no PIB ter diminuído de 30% para 23% durante o período 1996 a 2004, 80% da população permanece localizada no ambiente rural.
6. Apesar do código de investimento tratar investidores nacionais e estrangeiros de forma igual, o ambiente para investimento e negócio não é favorável. Procedimentos burocráticos e corruptos provocam atrasos e custos acrescidos. O sistema judicial encontra-se paralisado, fazendo com que a fiscalização de contratos e uso da terra se torne colateralmente impossível. Direitos inflexíveis de emprego promovem desincentivos para o emprego. O investimento é ainda inibido pela falta de infra-estrutura física e comercial. O Governo tem tido em conta alguns destes aspectos através da criação de zonas livres de imposto “duty free” para indústrias de processamento para exportação e turismo, mas o FMI e a comunidade doadora mantém a pressão para reformas estruturais mais aprofundadas e fundamentais.
7. O desenvolvimento Nacional é orientado por uma estratégia de redução da pobreza (PARPA) que se foca em melhoramentos nos serviços públicos relacionados com a educação, saúde, agricultura e desenvolvimento rural, infra-estruturas básicas, boa governação e gestão macroeconómica e financeira. Como país ACP, o nono Fundo de Desenvolvimento Europeu encontra-se a suportar o Programa Indicativo Nacional com €329 milhões, que inclui medidas coerentes com o PARPA.



Oportunidades de comércio melhoradas estão previstas com a aplicação do Acordo de Parceria Económico regional, em vias de ser assinado pelos países SADC e a UE, com início apontado para 2008.

8. As responsabilidades de administração pesqueira, gestão e desenvolvimento encontram-se sob o mandato do Ministério das Pescas e respectivos Institutos e Direcções subsidiárias. A política de pescas encontra-se apenas fracamente definida e estagnada. A capacidade da política de desenvolvimento é virtualmente inexistente, apesar da introdução de alguns mecanismos consultivos. A capacidade de implementação, em termos de informação e investigação pesqueira, desenvolvimento nacional das pescas, gestão, monitorização, controlo e vigilância das pescas, é fraca. Todavia, os controlos sanitários são considerados equivalentes aos requisitos da UE e Moçambique pode exportar produtos da pesca, incluindo os provenientes da aquicultura, para a UE.
9. A política respeitante à exploração dos recursos nacionais é de favorecimento dos operadores nacionais (incluindo joint-ventures) nos quais reside capacidade. O acesso estrangeiro a pescarias de camarão de profundidade, tunídeos e grandes pelágicos encontra-se sujeito a licenciamento. Embarcações nacionais, industriais e semi-industriais, operando sob gestão de joint-ventures e de nacionais, exploram a pescaria de camarão de superfície. Existe uma clara política em favor do desenvolvimento das pescas de pequena escala. O quadro legal para o sector é composto por uma Lei das Pescas inadequada e desactualizada e um novo Regulamento concordante com os compromentimentos internacionais de Moçambique.
10. Os principais stakeholders das pescarias nacionais consistem de cerca de 100,000 pescadores de subsistência e de pequena escala localizados em comunidades costeiras. Estimam-se 8,000 empregados nas pescas semi-industrial e industrial (consistindo de 192 navios em 2005, principalmente afectos ao arrasto de camarão). Destes, 80 são arrastões congeladores aprovados para abastecer o mercado da UE. Existem 20 estabelecimentos de processamento de pescado (16 aprovados para o Mercado da UE, 3 dos quais estão relacionados com empresas de aquicultura de camarão). A pesca interior é importante no Lago de Cahora Bassa, onde pescarias semi-industriais abastecem as actividades de secagem de peixe e uma exportação e comércio regional de 12.000 toneladas/ano de kapenta.
11. A pesca marinha nacional focaliza-se nos recursos costeiros, produzindo cerca de 100.000 toneladas por ano provenientes da pesca artesanal e 32.000 toneladas da pesca industrial. A última inclui um conjunto de espécies de camarão, peixes pelágicos pequenos e demersais. O consumo anual de pescado é estimado em cerca de 7kg/capita; Com excepção para as regiões costeiras e lacustres o pescado aparenta ter uma modesta contribuição para a dieta nacional.
12. As frotas industriais estrangeiras que pescam em Moçambique consistem de arrasto demersal, cercadores e palangreiros de superfície, tendo como alvo os recursos de camarão de profundidade, tunídeos, espadarte e tubarões. A produção é estimada em cerca de 17.000 toneladas em 2004, no entanto a captura reportada da pescaria offshore não é consistente.
13. O acesso a embarcações com bandeira estrangeira faz-se através do Acordo de Pesca UE-Moçambique ou através de licenças privadas. Nos operadores estrangeiros incluem-se cercadores (35 da UE e 19 de outros, principalmente com bandeira das Seicheles e Taiwan) e 143 palangreiros de superfície de fora da UE, operando sobretudo sob bandeira de Taiwan e Japão. A ZEE de Moçambique é também, aparentemente explorada por um nível sustentado de pesca ilegal, não regulada e não declarada.
14. Os principais recursos pesqueiros de interesse para as pescas industriais são o camarão de superfície e de profundidade e os grandes pelágicos (tunídeos – bonito e albacora, espadarte e tubarões). Existe evidência de que os stocks de camarão de superfície são explorados a níveis insustentáveis, enquanto que os de camarão de profundidade não são explorados na totalidade, devido principalmente aos elevados custos de exploração e ao limitado mercado para estas espécies. Não existem dados compreensivos sobre as condições dos outros recursos demersais. No que respeita aos recursos de migradores de tunídeos e outros grandes pelágicos no Sudoeste do

Oceano Índico encontram-se em geral explorados na plenitude. Existe expressa, particular preocupação relativa ao Patudo, no sentido de que estes tunídeos possam estar a ser explorados a níveis insustentáveis, em especial na pesca com DAFs; a organização de pescas regional, a Comissão de Tunídeos do Oceano Índico (IOTC), está também preocupada com a possível depleção localizada de espadarte, bem como evidência emergente de níveis insustentáveis de capturas de tubarões.

15. Moçambique possui um ambiente costeiro e marinho, extensa e largamente impoluto, com a presença de diversas espécies em perigo de mamíferos marinhos e répteis. O país alberga o manatim em perigo e existem áreas importantes de reprodução de tartarugas no norte do país. Duas áreas protegidas foram criadas no norte de Moçambique (o Arquipélago de Bazaruto e o Parque Nacional das Quirimbas) com o apoio do Banco Mundial e GEF, com o intuito de proteger ecossistemas marinhos ameaçados. Os parques são adjacentes a importantes pesqueiros.
16. O presente protocolo é o primeiro protocolo desde a renovação do Acordo de Pescas entre a UE e Moçambique em 2004. Foi iniciado em 1 de Janeiro de 2004, providenciando oportunidades de pesca para 1.000 toneladas/ano de camarão de profundidade (mais as capturas acessórias permitidas), e acesso para 35 atuneiros cercadores e 14 palangreiros de superfície. A captura referencial de tunídeos estipulada no acordo é de 8.000 toneladas. A duração do protocolo é para um período de 3 anos, até 31 de Dezembro de 2006. O protocolo encontra-se agora no seu terceiro ano.
17. O Acordo tem sido efectivo na provisão de oportunidades de pesca para uma média de 35 cercadores da UE e 12 palangreiros de superfície da UE. O Acordo não tem sido efectivo no fornecimento de oportunidades de pesca para a frota de arrasto da UE, já que nenhuma oportunidade para camarão de profundidade foi utilizada.
18. Dados de captura para as embarcações que se encontram a pescar ao abrigo do acordo estão apenas disponíveis para 2004. Apenas os cercadores pescaram na ZEE, mas nunca submeteram declaração de capturas directamente às Autoridades de Moçambique, conforme requerido pelo Acordo. A declaração de captura foi no entanto submetida via o Estado Membro destas embarcações, o que constitui uma melhoria da situação anterior, quando estes navios operavam com licenças privadas. Os palangreiros de superfície não pescaram na ZEE em 2004 e 2005, apesar de licenciados. Os operadores destas embarcações indicam que possivelmente a pesca realizar-se-á em 2006. Todavia, não existe qualquer interesse dos operadores da UE na pescaria do camarão de profundidade, sobre a qual os elevados custos de exploração e a limitação de mercados condicionam a viabilidade desta pescaria para as embarcações da UE.
19. As capturas ao abrigo do acordo abasteceram o Mercado da UE numa média estimada de 8.753 toneladas/ano de atum, no valor de €6,7 milhões (apesar deste valor ter sofrido uma provável redução durante os últimos anos do acordo. As capturas de 2004 foram anormalmente elevadas (12.060 toneladas) devido à presença de cardumes de juvenis de albacora na parte norte do canal de Moçambique. As primeiras sugestões quanto a 2005 indicam que esta situação terá revertido para um padrão mais normalizado, e desta forma, os consultores estimaram que as capturas terão caído para cerca de 5.446 toneladas.
20. O Protocolo providenciou uma compensação financeira para Moçambique numa média de €4,1 milhões/ano, mais o valor das licenças e pagamentos adicionais numa média de €0,4 milhões nos dois anos que decorreram. A totalidade da compensação tem sido direccionada para acções dirigidas de apoio a MCV (MCS), investigação pesqueira, desenvolvimento institucional, formação e controlo de qualidade. Os pagamentos da compensação financeira encontram-se actualizados, mas a submissão por parte do Ministério das Pescas do relatório anual de 2005 relativo ao uso dos fundos nas acções dirigidas encontra-se atrasado.
21. Os custos e benefícios do Acordo não são partilhados de modo equivalente. Embora grande parte do valor acrescentado directo de €3,0 milhões/ano gerados pelo acordo cair para a Comunidade, 85% da compensação paga reflecte a inclusão de oportunidades de pesca de camarão não utilizadas. Assim, o Acordo tem sido implementado segundo o primeiro protocolo num custo

líquido para a Comunidade de €1,2 milhões/ano. O Acordo poderá ser considerado como tendo tido uma eficiência negativa, com um custo-vantagem de apenas 0,7. Dos rendimentos de Moçambique, 94,7% foram fornecidos por fundos públicos e 5,3% dos armadores provenientes das licenças de pesca. O Acordo tem sustentado 14 empregos Comunitários e 38 em países ACP (mas nenhuns em Moçambique).

22. Os impactes em Moçambique têm sido quase exclusivamente limitados ao rendimento financeiro da compensação e licenças (em média €4,5 milhões/ano). Este valor tem representado uma significativa contribuição (16%) do orçamento operativo e de investimento médio anual do Ministério das Pescas. Todavia, apenas 42% dos fundos de 2004 foram gastos nas acções dirigidas programadas. Mais ainda, na área chave da monitorização, controlo e vigilância das pescas (MCS), na qual Moçambique tem beneficiado da assistência do projecto regional SADC financiado pelo FED, o rácio de utilização foi apenas de 15%. O tratamento do Ministério das Pescas dos fundos não utilizados não tem sido em conformidade com as regras do Tesouro. Pelo menos 5% das acções dirigidas são gastas em outras actividades não especificadas no Acordo. A relevância dos pagamentos da compensação financeira efectuados aparenta terem sido comprometidos por um fraco quadro de política de pescas e capacidade de implementação do país parceiro.
23. O Acordo não tem sido efectivo no abastecimento de pescado para Moçambique. Embora alguns serviços a navios estarem perspectivados para serem iniciados no futuro próximo, o Acordo também não tem sido efectivo na estimulação do desenvolvimento do sector das pescas de Moçambique. Muito menos o Acordo tem contribuído para o emprego, alívio da pobreza e garantia alimentar no país parceiro.
24. No que respeita a sustentabilidade, as capturas relativamente reduzidas na ZEE ao abrigo do Acordo, em relação ao total de capturas de tunídeos e grandes pelágicos nas pescas no Oceano Índico (correspondendo a 0,5% do total das capturas de tunídeos), significa que o Acordo tem tido um impacte negligenciável nestes stocks. Atendendo, a que não tem existido actividade na ZEE de palangreiros de superfície, o Acordo não tem tido impacte na condição dos stocks de espadarte e tubarões, principalmente nos stocks que receberam a preocupação do IOTC. Similarmente, não tem havido impacte na mortalidade de diversas espécies em perigo de tartarugas marinhas, associadas com a ZEE de Moçambique. Todavia, o Acordo tem contribuído indirectamente para a presença na região destas embarcações e poderá assim, vir a existir estas interacções, caso as oportunidades venham a ser exploradas durante o período remanescente do Protocolo.
25. A sustentabilidade na exploração de tunídeos e recursos de grandes pelágicos, ao abrigo do Acordo é promovido pelo estatuto de membro da Comunidade na IOTC, assegurando que as recomendações de gestão são implementadas com respeito à pesca pelas embarcações da UE. Todavia, a não participação de Moçambique nesta organização reduz as oportunidades para a investigação científica, declaração de capturas e partilha de informação, limitando assim o potencial para aplicação futura dos princípios de pesca responsável em caso de termo operativo do Acordo. Em termos de contribuição para a pesca responsável, o acordo tem resultado numa melhoria da declaração de capturas por parte das embarcações UE operando na ZEE de Moçambique. Embora o Acordo suporte acções dirigidas para a investigação pesqueira e MCV (MCS) das pescas, a capacidade do país parceiro nestas áreas permanece fraca. Efectivamente, para além do caso do camarão, não existem implementados outros planos nacionais de gestão das pescas. Apesar do suporte financeiro das acções dirigidas e do Projecto FED SADC MCS para desenvolvimento da capacidade de MCV (MCS), Moçambique ainda não possui meios de superfície efectivos para MCV, minando a futura exploração sustentável dos recursos da ZEE.
26. Em conclusão, o Acordo tem sido relevante para os cercadores atuneiros da UE e até certo ponto para a frota de palangre de superfície, mas não para o segmento de arrastões da UE. A não utilização de oportunidades de camarão de profundidade tem reduzido de modo significativo a eficiência do Acordo. O Acordo não tem sido implementado de modo eficiente, principalmente devido à inclusão de oportunidades de pesca de camarão para as quais não existe procura por parte dos armadores das embarcações da UE, por causa dos elevados custos de exploração e mercados

limitados para estas espécies. Os consideráveis potenciais benefícios para Moçambique têm sido comprometidos por falta de um quadro claro em política de pescas e uma fraca capacidade de implementação, resultando numa ineficiente aplicação dos fundos para acções dirigidas. A Comunidade, bem como o país parceiro não podem ser tidos como tendo ganho os benefícios óptimos, potencialmente disponíveis do primeiro protocolo ao abrigo do Acordo.

27. Todavia, o Acordo é considerado como sendo elevadamente relevante e coerente para com a Comunidade e políticas relativas, às pescas (em relação à PCP), desenvolvimento (em relação ao Acordo de Cotonou e projectos regionais do FED, PIR e PIN) e comércio, em relação ao futuro Acordo de Pareceria Europeu SADC. É muito relevante para o objectivo do país parceiro em maximizar os retornos das pescarias na ZEE, que não podem ser exploradas por operadores nacionais.
28. No que respeita ao futuro as partes deverão considerar se um novo Acordo deva incluir apenas oportunidades para atuneiros cercadores e palangreiros de superfície. Estas oportunidades de pesca no Acordo são viáveis, relevantes e podem explorar-se de forma sustentável, ao abrigo do quadro de recomendações da IOTC. Crucialmente, este tipo de acordo continuará a beneficiar o sector das pescas de Moçambique através de um programa de medidas de apoio no quadro de um Acordo de Pesca de Parceria, apesar de necessariamente mais limitado que o presente.
29. Em termos de sustentabilidade ambiental, é bastante desejável que um Acordo seja concluído, para assegurar que embarcações da UE e outros a pescar na ZEE do país parceiro serão sujeitos de forma igual às recomendações de gestão da IOTC. Isto é particularmente importante em relação aos recursos de patudo na pesca de cerco (com DAFs) e recursos de espadarte e tubarões (e pesca accidental de tartarugas) na pescaria de palangre de superfície. Mais ainda, a renovação do Acordo poderia providenciar os meios para a associação formal de Moçambique ao IOTC, promovendo assim, e estendendo o potencial para uma pesca responsável na região e garantindo uma aplicação igualitária das medidas de gestão na ZEE de Moçambique.
30. É também recomendado que os procedimentos para a utilização financeira estipulada no Protocolo devam reflectir os requerimentos para uma disciplina orçamental melhorada, no que respeita os investimentos do sector público pesqueiro. Neste contexto, deverá incluir-se um requisito para a utilização de todos os fundos através do canal do Tesouro (CUT, Conta Única do Tesouro) e o financiamento de acordo com um leque de medidas formalmente acordadas e programadas, em linha com os princípios de um Acordo de Pesca de Pareceria. Os procedimentos seguidos deverão ser coerentes com o Memorando de Entendimento de 2004 (Memorandum of Understanding) ao abrigo do Programa de Doadores Conjunto para Apoio Macro-financeiro, do qual a Comunidade Europeia é signatária.
31. As áreas prioritárias de pareceria para consideração de um novo Acordo empregando os princípios de um Acordo de Pesca de Pareceria são: a) continuação de apoio para o reforço da capacidade MCV (MCS) das pescas, em linha com os objectivos do Projecto SADC MCS para Moçambique; b) apoio para a associação de Moçambique e participação formal activa no IOTC; c) introdução de uma nova Lei das Pescas e quadro da política de pescas; d) desenvolvimento de planos de gestão de recursos das pescas que não os de camarão; e) reforço financeiro e contabilístico do sector público, em particular em relação ao Fundo de Fomento Pesqueiro e à preparação do Quadro Intermédio de Utilização Financeira para o Ministério das Pescas.

## RESUME EXECUTIF

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1. Ce rapport fournit les conclusions et recommandations de l'évaluation de l'Accord de Pêche et de son Protocole conclu entre l'Union européenne (UE) et la République de Mozambique, ainsi qu'une analyse des impacts de futur protocole, y compris une analyse ex-ante. Ce travail, commandé par la Direction générale de la Pêche de la Commission européenne, s'insère dans le contrat-cadre conclu "for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states" mis en oeuvre par un Consortium regroupant Oceanic Développement (France), Poseidon Aquatic Resource Management (UK) and Megapesca Lda (Portugal).
2. L'étude a été entreprise par une équipe constituée d'un Team Leader/Expert «Evaluation», d'un expert «Socio-économie – Institutions», d'un expert «Ressources et économie des pêches» et d'un expert «législation». Les experts se sont rendus au Mozambique durant le premier trimestre de 2006, et ont eu des réunions de travail avec les services du Ministère des Pêches, du Ministère de l'Environnement, du Ministère de l'Économie et des Finances et des organismes et institutions associés. L'équipe d'évaluation a également rencontré les personnes concernées au sein de la DG Pêche ainsi que les parties prenantes du secteur au Portugal et Espagne.
3. La République du Mozambique est située sur la côte Sud-Est de l'Afrique. Elle possède une surface de 801,590 km<sup>2</sup>. Le pays est classé comme Pays Moins Avancé (PMA), avec un PIB de US\$220/capita en 2002. Avec un taux de croissance évalué à 2.3% (2.6% en 2000), la population du pays a été estimée à 19.3 million en 2005 (sans prendre en considération l'impact du HIV/SIDA). L'Index du Développement Humain (HDI) du PNUD place le Mozambique au dernier rang des 14 pays de la SADC et plus globalement au 168e rang sur 177 pays.
4. L'économie du Mozambique a montré une rapide et constante croissance depuis la fin en 1992 d'une longue et coûteuse guerre civile qui a suivi l'indépendance face au Portugal en 1975. Des élections se sont correctement déroulées en 1994, 1999 et 2004. Suite à sa victoire aux élections législatives et présidentielles en décembre 2004, le FRELIMO (ancien mouvement indépendantiste) domine toujours la vie politique nationale. En dépit d'un environnement politique stable, les réformes du secteur public et financières ne progressent que lentement, et le pays reste très dépendant de l'aide étrangère pour gérer ses déficits budgétaires. Le pays a souffert d'inondations sévères en 2000 et 2001, causant de lourdes pertes en vie humaines et détruisant nombre d'infrastructures.
5. L'économie est dominée par le transport et activités associés, l'exportation d'hydro-électricité vers les pays voisins et l'aluminium. Les exportations les plus significatives du Mozambique comprennent l'aluminium, la crevette, les noix de cajou, le sucre, le citron, le coton, des produits manufacturés et bois de construction. Bien que la part de l'agriculture dans le PIB ait diminué de 30% à 23% pendant la période 1996 à 2004, la population est rurale à 80%.
6. Bien que le code des investissements traite sur un même plan les nationaux et les investisseurs étrangers, l'environnement pour l'investissement et les affaires ne peut être considéré comme favorable. Les procédures bureaucratiques et la corruption causent des et génèrent des coûts. Le système judiciaire est paralysé, n'offrant pas de sécurité juridique suffisante aux contrats et biens. Le droit du travail, extrêmement rigide, est dissuasif pour les employeurs. L'investissement est de plus, rendu difficile par un manque général d'infrastructures. Le Gouvernement tente de remédier à ces obstacles par le biais d'incitations (zones franches et exemptions fiscales) mais les bailleurs de fonds et le FMI maintiennent leur demande de réformes structurelles plus profondes et plus fondamentales.
7. Le développement national est guidé par la stratégie de la réduction de la pauvreté (PARPA) qui se concentre sur l'amélioration des services publics en lien avec l'éducation, la santé, l'agriculture et développement rural, les infrastructures de base, la bonne gouvernance et la gestion macroéconomique et financière. En tant que pays ACP, le 9eme FED supporte le Programme Indicatif National avec M€ 329 qui inclut des mesures de cohérence avec le PARPA. Une augmentation significative des échanges commerciaux est escomptée grâce au prochain accord commercial qui doit être signé entre pays de la SADC et l'UE. (effectivité : 2008)

8. L'administration, la gestion et le développement des pêches relèvent du Ministère des pêches et des institutions et organismes rattachés. La politique des pêches manque de force et de cohérence. Il n'existe pas de politique de développement du secteur, bien que quelques mécanismes de consultation aient été mis en place. La capacité à mettre en oeuvre toute action en matière de collecte statistique, de recherche scientifique, de développement du secteur, de gestion des pêches et de suivi contrôle et surveillance (SCS) est très limitée. Cependant les mesures de contrôle en matière d'hygiène sont considérées comme satisfaisant aux exigences minimales de l'UE, et le Mozambique peut exporter ses produits, y compris ceux issus de l'aquaculture, vers les marchés européens.

9. La politique générale en matière d'exploitation des ressources halieutiques vise à favoriser les entreprises nationales (en y incluant les sociétés mixtes) quand il y a cette possibilité. Les étrangers ont accès à des ressources (crevettes profondes ; thon ; grands pélagiques) par le biais de licences. Les navires industriels et semi-industriels, opérant sous pavillon national dans le cadre d'entreprises nationales ou de sociétés mixtes, exploitent la pêcherie crevette. Un dispositif clair en faveur du développement des pêches artisanales est en place. Le cadre juridique du secteur comprend une Loi sur les pêches, inadaptée et ancienne, et un dispositif réglementaire en cohérence avec les engagements internationaux du Mozambique.

10. La pêche nationale concerne environ 100,000 personnes issues de communautés côtières pratiquant une pêche de subsistance ou artisanale. Environ 8,000 personnes travaillent pour le secteur de la pêche industrielle et semi-industrielle (comprenant 192 navires en 2005, principalement engagés dans la pêche crevette). Parmi ceux-ci 80 chalutiers congélateurs sont agréés pour livrer directement le marché européen. Il y a 20 unités de transformation (dont 16 disposent d'un agrément sanitaire UE ; 3 sont liées à des entreprises aquacoles) La pêche continentale est significative sur le lac Cahora Bassa, où une pêche de type semi industrielle alimente une activité de séchage de poisson (dont 1200 tonnes/an exporté régionalement)

11. La pêche artisanale produit environ 100,000 tonnes par an tandis que la pêche industrielle produit environ 32,000 tonnes. Cette dernière activité inclue la pêche crevette, les petits pélagiques et les espèces démersales. Avec une consommation annuelle de poisson estimée à 7 kg/an/personne, excepté dans les régions côtières ou lacustres, le poisson participe peu au régime alimentaire national.

12. La flotte de pêche industrielle étrangère pêchant dans les eaux du Mozambique est composée essentiellement de chalutiers ciblant les espèces démersales, de senneurs et de palangriers de surface ciblant les crevettes (espèces profondes), thon, espadon et les requins. La production est estimée à environ 17,000 tonnes en 2004, mais l'apport statistique n'est pas satisfaisant.

13. L'accès aux eaux mozambicaine ne peut se faire que dans le cadre de l'accord de pêche Mozambique – UE, ou dans le cadre de licences privées. Les opérateurs étrangers dénombrés représentent 35 thoniers senneurs européens et 19 non-européens (ces derniers principalement sous pavillons seychellois et asiatiques) et 143 palangriers de surface non EU (principalement sous pavillon taïwanais et japonais). Il est vraisemblable que la ZEE mozambicaine est exploitée de façon significative par des navires IUU.

14. Les principales ressources intéressant la pêche industrielle sont la crevette (crevette côtière et crevette d'eaux profondes) et les grands pélagiques (yellowfin et skipjack, espadon et requins). Il est évident que les stocks de crevettes côtières sont surexploités, alors que les crevettes profondes ne sont pas pleinement exploitées, compte tenu notamment du coût d'exploitation très élevé et d'un marché limité pour ces espèces. Il n'existe pas de sources statistiques pouvant rendre compte de l'exploitation des autres ressources démersales. Les ressources thonières et autres grands pélagiques du Sud Ouest de l'océan indien sont considérés généralement comme pleinement exploités. La CTOI porte une attention particulière au niveau d'exploitation du stock de bigeye considéré comme trop élevé (pêche sur FAD), ainsi qu'à la probable baisse du stock d'espadon, et enfin au niveau d'exploitation des requins.

15. Le Mozambique dispose d'un environnement marin et côtier à la fois vaste et préservé, qui abrite plusieurs espèces menacées de mammifères et de reptiles. Le pays abrite notamment le dugong. Il y a d'importantes zones de pontes de tortues marines dans le nord du pays. Deux zones de protection ont été créées dans le nord du pays (les parcs nationaux de l'archipel des Bazaruto et celui des Quirimbas) avec

l'appui de la Banque Mondiale et du GEF, dans le but de protéger les écosystèmes marins menacés. Les parcs sont adjacents à d'importantes zones de pêche.

16. Le protocole en cours est le premier depuis le renouvellement de l'accord de pêche en 2004. Il est entré en vigueur le 1<sup>er</sup> janvier 2004 et offre des possibilités de captures à hauteur de 1,000 tonnes/an de crevettes profondes (plus prises accessoires) ainsi que l'accès pour 35 thoniers senneurs et 14 palangriers de surface. Le tonnage de référence est de 8,000 tonnes. La durée du protocole est de 3 ans, jusqu'au 31 décembre 2006. Le protocole est donc dans sa troisième année.

17. L'Accord a été effectivement utilisé par une moyenne de 35 thoniers senneurs et 12 palangriers de surface. L'accord n'a, par contre, pas été utilisé pour le segment des chalutiers sous pavillon EU. (aucune pêche à la crevette profonde)

18. Les statistiques de captures des navires travaillant sous accord ne sont disponibles que pour 2004. Seuls les thoniers senneurs ont pêché dans la ZEE mais ils n'ont jamais soumis leurs données de capture directement aux autorités mozambicaines, comme prévu dans l'accord. Les données ont cependant été fournies via les états du pavillon de ces navires. Ceci représente une amélioration par rapport à la situation précédente de pêche sous licence privée. Les palangriers de surface n'ont pas pêché dans la ZEE en 2004 et 2005, bien qu'ayant pris des licences. Les armateurs ont indiqué que leurs navires pourraient être actifs dans ces eaux en 2006. Les armateurs européens n'ont aucun intérêt pour la pêche des crevettes profondes compte tenu des coûts d'exploitation élevés combinés à un marché étroit qui obèrent la viabilité de cette activité.

19. Les prises sous Accord ont fourni en moyenne 8,753 tonnes/an aux opérateurs européens, pour une valeur de € 6.7 millions (bien que ce montant ait probablement baissé durant les années les plus récentes). Les captures de 2004 ont été inhabituellement hautes (12,060 tonnes) compte tenu de la présence de bancs libres de yellowfin dans la partie nord du canal de Mozambique. Il semble que 2005 ait suivi un schéma plus traditionnel d'exploitation, et les consultants ont estimé que les captures seraient descendues à environ 5,446 tonnes.

20. Le Protocole a fourni une compensation financière moyenne au Mozambique de € 4.1 millions/an à laquelle s'ajoute les coûts des licences et les paiements additionnels pour une moyenne annuelle de € 0.4 million sur les 2 années. L'ensemble de la compensation a été dirigée sur des actions ciblées servant à soutenir le SCS, la recherche halieutique, le développement institutionnel, la formation et le contrôle sanitaire. Les paiements de la compensation financière sont à jour, mais la soumission par le Ministère des pêches du rapport 2005 sur l'usage des fonds affectés aux actions ciblées est différée.

21. Les coûts / bénéfices de l'Accord ne sont pas également partagés entre les parties. L'essentiel de la valeur ajoutée directe de €3.0 millions/an créée par l'Accord, revient à l'UE. 85% de la compensation payée représente l'inclusion dans l'accord de la possibilité de pêche à la crevette profonde, inutilisée. De ce fait l'Accord a été mis en place par le premier Protocole à un coût net pour la Communauté de €1.2 millions/an. L'accord peut être analysé comme ayant une efficacité négative, avec un ratio coût-avantage de seulement 0.7. S'agissant des revenus fournis au Mozambique par l'Accord, 94,7% l'ont été par des fonds publics et 5,3% par les armateurs sous forme de droits de licence. L'Accord a financé environ 14 emplois dans la Communauté et 38 dans les pays ACP (pas seulement au Mozambique)

22. Les impacts sur le Mozambique ont été limités presque exclusivement au revenu financier tiré de la compensation financière et droits des licences (moyenne € 4.5 millions/an). Ces sommes représentent une contribution significative (16%) du budget global de fonctionnement et d'investissement du Ministère des pêches. Cependant seulement 42% des fonds pour l'année 2004 ont été dépensés sur des actions ciblées programmées. De plus, dans l'action-clé du SCS, où le Mozambique a bénéficié de l'assistance du projet régional SADC financé par le FED, le taux de décaissement n'était que de 15%. Le traitement par le Ministère des pêches des fonds inutilisés ne se conforme pas aux règles du Trésor public. Au moins 5% des fonds alloués à des actions ciblées sont alloués à des activités autres que celles spécifiées dans l'accord de pêche. La pertinence des paiements de la compensation financière semble compromise par la faiblesse de la politique des pêches d'une part et d'autre part de la capacité de sa mise en oeuvre par le pays partenaire.

23. L'Accord ne peut être jugé efficace quant à l'augmentation des volumes débarqués au Mozambique. Bien qu'une activité de services liée aux navires soit envisageable dans un futur proche, on ne peut considérer que l'Accord ait été un facteur de développement du secteur de la pêche mozambicain. L'accord n'a contribué ni à l'emploi, ni à la lutte contre la pauvreté ni à la sécurité alimentaire du pays partenaire.

24. En termes de durabilité, les captures de thon et de grands pélagiques réalisées dans le cadre de l'accord sont si modestes (correspondant à 0.5% des captures totales de thon) que l'on peut considérer que l'accord a un impact négligeable sur les stocks. L'absence de pêche palangrière sous accord signifie que celui-ci n'a aucun impact sur les stocks d'espadon et de requins pour lesquels la CTOI exprime certaines préoccupations. De la même manière, il n'y a eu aucun impact sur la mortalité des espèces menacées de tortues marines. Cependant, l'accord a contribué indirectement à la présence dans la région de ces navires et il est possible que de telles interactions existent si les possibilités de pêche offertes devaient être effectivement exploitées durant la période restante du Protocole.

25. La prise en compte de la notion de durabilité dans l'exploitation des stocks thoniers et de grands pélagiques est assurée par le statut de membre de la CTOI de l'UE, qui s'assure que les navires battant pavillon des états membres se conforment bien aux recommandations de l'ORP. Cependant, la non-participation du Mozambique à cette organisation réduit d'autant les opportunités pouvant être offertes à la recherche scientifique, à la collecte statistique et à l'échange d'informations et en cela, limite l'application des principes d'une pêche responsable si l'accord devait ne pas être renouvelé. En termes de contribution à une pêche responsable, l'accord a permis d'améliorer le suivi statistique des navires européens dans la ZEE du Mozambique. Alors que l'accord soutenait financièrement des actions ciblées dans les domaines de la recherche halieutique et du SCS, la capacité du Mozambique dans ces domaines reste faible. On peut considérer qu'il n'y a effectivement aucun plan national de gestion des pêches autre que pour la pêche crevettière. En dépit du soutien des actions ciblées financées par l'accord et du projet SCS de la SADC/FED (développement d'une capacité nationale en matière de SCS), le Mozambique n'a toujours pas à ce jour de moyen de surveillance de surface, ce qui obère l'exploitation durable des ressources de la ZEE.

26. En conclusion, on doit considérer que l'Accord a été pertinent s'agissant de la pêche thonière à la senne et, dans une certaine mesure, pour la pêche palangrière de surface, mais en aucun cas pour la pêche chalutière. La non-utilisation des licences de pêche à la crevette profonde a réduit de façon importante l'efficacité de l'accord. Le Mozambique dispose potentiellement de moyens considérables au titre de la contrepartie, qui ont été compromis par l'absence de politique des pêches claire, cohérente et affirmée d'une part et d'autre part par une faible capacité de gestion et d'évaluation débouchant sur une déperdition des fonds finançant les actions ciblées. Ni la Communauté ni le Mozambique n'ont retiré le gain optimal des potentialités offertes par l'accord.

27. Cependant, l'Accord est particulièrement pertinent et cohérent avec les politiques communautaires liées à l'activité de pêche (et notamment à la PCP), au développement (en liaison avec l'accord de Cotonou, et les projets régionaux du FED appuyés par RIP et NIP) et aux échanges (cadre d'un futur accord de partenariat SADC – UE). Il est de plus très pertinent avec l'objectif du Mozambique de maximiser les retours financiers de l'exploitation de sa ZEE qui ne peut être exploitée par ses propres opérateurs nationaux.

28. Prenant en compte l'avenir, les parties ne devraient considérer comme base d'un nouvel accord que la pêche à la senne et la pêche à la palangre de surface (Scénarios 3 et 4). Ce type d'activité de pêche est cohérent avec la notion d'utilisation de l'accord et permet une exploitation dont la durabilité est assurée par le respect des recommandations de la CTOI. Un tel accord pourrait bénéficier au secteur de la pêche du Mozambique par un programme de mesures ciblées, financées par l'accord, mais dans un périmètre nécessairement plus restreint qu'à présent.

29. En termes d'environnement durable, il est hautement souhaitable qu'un accord soit conclu, afin de s'assurer que les navires européens et autres pavillons pêchant dans les eaux mozambicaines se conforment aux recommandations de la CTOI. Ceci est notamment valable pour les mesures de gestion relative au bigeye capturé à la senne tournante sur FAD, à l'espadon et aux requins (ainsi qu'aux prises accidentelles de tortues) dans le cas de la pêche palangrière de surface. En outre le renouvellement de



l'accord pourrait fournir des moyens pour que le Mozambique puisse adhérer à la CTOI, permettant de ce fait un meilleur développement à l'échelon régional d'une pêche responsable et assurant une application générale des mesures de gestion dans la ZEE du Mozambique.

30. Il est également recommandé que les procédures financières liées aux débours dans le cadre du Protocole reflètent l'exigence d'une meilleure discipline budgétaire de la partie mozambicaine. Tous les fonds devraient transiter via le Trésor public (CUT – Conta Unica do Tesouro) et financer un ensemble de mesures formellement agréées et programmées, en cohérence avec les principes généraux des accords de partenariat. Les procédures à suivre devront bien entendu être cohérentes avec le MoU de 2004 du Joint Donor Programme for Macrofinancial Support, dont la Communauté européenne est signataire.

31. Les aspects partenariaux les plus primordiaux d'un nouvel accord sont : a) appui continu au renforcement des capacités du Mozambique en terme de SCS, en cohérence avec les objectifs du projet SADC/EDF ; b) soutien à une adhésion du Mozambique à la CTOI soit comme partie contractante soit comme partie coopérante non-contractante ; c) mise en oeuvre d'une nouvelle législation des pêches et d'une nouvelle politique des pêches ; d) définition de plan de gestion pour les autres pêcheries que crevette ; e) renforcement des capacités de comptabilité et de gestion financière, notamment via le Fondo Fomento Pesquero, et de suivi budgétaire par le Ministère des Pêches.

## INTRODUCTION

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This report describes the findings of a study to evaluate the Fisheries Agreement and a Protocol between the European Union (EU) and the Republic of Mozambique. Findings from this study will be used to provide background information for discussions leading to negotiations for a further fisheries agreement.

The study was commissioned by the Directorate General of Fisheries of the European Commission under a framework contract “for performing evaluations, impact analyses and monitoring services in the context of fisheries partnership agreements concluded between the Community and non-member coastal states”, operated by the consortium comprising Oceanic Développement (France), Poseidon Aquatic Resource Management (UK) and MegaPesca Lda (Portugal). The Terms of Reference for the study are shown in Annex 1.

This Evaluation study was undertaken by a team comprising Team Leader/Evaluation Specialist, Institutional and Socioeconomic Specialist, Fisheries Economist, Fisheries Resources specialist and Fisheries Law Specialist. In preparation for a Fisheries Partnership Agreement (FPA), and in order to fully evaluate the significance of the Agreement for the Community and Mozambique, Members of the Evaluation Team have undertaken meetings with Commission staff, and met with EU fishery sector stakeholders in Portugal and Spain. Team Members visited Mozambique during the first quarter of 2006, and held detailed discussions with the Ministry of Fisheries (including the Minister), and staff of the Ministry of Environment, Ministry of Economy and Finance and their associated institutions.

The framework for the evaluation consists of the revised model template designed by the Commission and the Consortium following dialogue in December 2004. This is to a large extent influenced by Council Decision of 19 July 2004 on Fisheries Partnership Agreements (COM(2002) 637 final).

The current study therefore represents an ex-post evaluation and impact assessment of the 1<sup>st</sup> protocol, with a view to assessing the conditions regarding the implementation of the Protocol, its economic, political, social, and environmental impacts and the possibilities for a future Protocol. It also includes a forward consideration of key issues to be considered in the renewal of the Agreement, upon which are based recommendations for a new Fisheries Partnership Agreement and Protocol.

# 1 ANALYSIS OF THE GENERAL SITUATION

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## 1.1 POLITICAL CONTEXT

### *1.1.1 Background and General Description*

The Republic of Mozambique is located on the east coast of Southern Africa. It has an area of 801,590 sq km. It is a Least Developed Country (LDC) with a GDP of about US\$220/capita in 2002. With a population growth rate believed to be around 2.3% (2.6% in 2000), the country's population was estimated (without taking into account the impact of HIV/AIDS) to be 19.3 million in 2005. Mozambique has one of the lowest rates of urbanisation in the world with the majority (80%) of the population live in the rural areas. The UNDP Human Development Index (HDI) places Mozambique in last position among the 14 SADC countries and 168<sup>th</sup> out of 177 countries overall.

Mozambique is predominantly a flat, coastal plain, rising in the centre and north to a plateau of more than 500 metres and mountains of up to 2,600 metres in height. Rainfall in the south is scarce, outside of a narrow coastal strip, and the interior is generally a dry, drought-prone savannah in which animal husbandry is the main economic activity. Rainfall is higher and less erratic in the central and northern regions, which have a higher population density and are the main agricultural regions. The country is crossed by a number of large rivers, including the Limpopo, Lurio, Rovuma, Save and Zambezi.

An abundance of cheap hydroelectricity is one of the country's most significant resources, and has helped to attract foreign investment. Hydroelectric production is centred on the Cahora Bassa dam on the Zambezi River. The country still has considerable untapped hydroelectric potential. Natural gas has also been found in commercial quantities and exploitation, mainly for export, is under way. In addition, Mozambique, with a 2,700-km coastline, has significant marine resources. Shrimp were the country's main export until the development of the aluminium industry. Mineral resources are also abundant, including reserves of gold, gemstones, titanium, coal and bauxite, although there is little significant development to date.

Mozambique is prone to severe droughts and floods. As with other countries in the region, it is likely to be badly affected by global climate change as seasonal shifts in the Inter-Tropical Convergence Zone (ITCZ), responsible for the subcontinent's rainfall patterns, become increasingly erratic. The 1992 drought was the worst of the 20<sup>th</sup> century, although subsequent rainfall was above average, underpinning rising agricultural production. In the first quarter of 2000, a huge flood hit the southern and central provinces of Maputo, Gaza, Inhambane and Sofala as heavy rains caused rivers to burst their banks. Apart from an estimated 700 deaths, over 1m people were displaced and economic activity was seriously disrupted. Homes, factories and critical infrastructure such as roads and bridges were damaged and destroyed, constituting a major setback for the country and underlining the extent to which it is still vulnerable to such climatic shocks. Extensive international assistance was received after the 2000 floods but further serious flooding took place in the first quarter of 2001 in central regions. However the impact was less severe, as early warning systems had become more developed. Some donor funds have been directed towards flood prevention, although the scale of the task remains immense. The years 2003 and 2004 were characterised by poor rainfall in the central and southern provinces, affecting the livelihoods of around 650,000 Mozambicans.

### *1.1.2 Brief history*

In the 11<sup>th</sup> century the region was populated by the Shona peoples who flourished as a result of mining for gold. In 1497 Vasco de Gama led a Portuguese fleet around southern Africa to India, stopping on the way in Mozambique. The Portuguese sought to control the Indian Ocean spice trade, and established military bases along the Coast, whilst the interior of the country remained under the control of local African political systems. From the late 18<sup>th</sup> to the late 19<sup>th</sup> century the slave trade was Mozambique's most important business. In 1891, following pressure from Britain, the Portuguese agreed to a treaty defining the present-day boundaries of Mozambique. Full control of the country by Portuguese was gained in 1920. Under Portuguese rule Mozambique became a source of labour for the owners of gold mines in South

Africa and a source of cash crops for the owners of factories in Portugal. The Salazar dictatorship encouraged a Portuguese settler presence leading to some local industrialization, but with little development of local education and skills. South Africa's economic influence also remained dominant. In 1950s nationalist groups were set up among Mozambicans working in neighbouring countries. Three of these groups joined in 1962 to create the Mozambique Liberation Front (FRELIMO), with headquarters in Tanzania. By 1974 FRELIMO was active in more than half the country. On April 25, 1974 Portuguese army officers overthrew the dictatorship in Portugal and the new government opened independence negotiations with FRELIMO.

Independence was declared unilaterally by Frelimo on 25<sup>th</sup> June 1975, ending almost five centuries of Portuguese administration of the territory. Thereafter the economy declined rapidly in the wake of an exodus of Portuguese settlers and Asian traders and the adoption of central planning. This was followed by a devastating civil war between FRELIMO and Mozambique National Resistance (RENAMO) forces which led to a collapse in production, destruction of infrastructure, a large build-up of foreign debt, and the displacement of more than four million people (out of a population of 12 million in 1980). An UN-backed peace agreement ended the civil war in 1992. A reorientation of economic policies was initiated in the beginning of the 1980s and subsequently, Mozambique launched a structural adjustment programme (PRE) in 1987. The prospects for economic growth only became favourable after the peace agreement in 1992 and the first multiparty elections which took place in 1994. In December 2004, as a result of the third presidential and legislative elections, Armando Emílio Guebuza replaced Joaquim Chissano, who had held office for 18 years.

Mozambique is considered a success story in terms of transition from war to peace, but the political and economic situation continues to be problematic due to the slow pace of structural reform. A high dependence on foreign aid does not appear to have accelerated development; Mozambique ranks 168 out of 177 countries in terms of the UNDP human development index. A recent survey found that two thirds of the population live below the World Bank poverty limit of 1 USD. Today, the country is still in transition, with a large number of social and economic challenges, including unemployment, low agricultural production, and limited infrastructure and social services.

### *1.1.3 Democratic credentials*

The ruling party, Frente de Libertação de Moçambique (FRELIMO), retains the political initiative and remains firmly in control of the political scene following its victory in the December 2004 legislative and presidential elections. The elections are considered to have been the most controversial since multiparty democracy was introduced in 1994, with allegations of widespread fraud, although it is unlikely that this would have altered the overall result. The style and substance of governance under the newly elected president, Armando Guebuza, is substantially different, the most noticeable difference being that the period of political pluralism and national reconciliation that characterised the previous presidency appears to have ended.

The change reflects the fact that Mr Guebuza is closely aligned with Frelimo's traditional left-wing, anti-colonialist ideology. This contrasts strongly with the position of his predecessor Mr Chissano, who balanced FRELIMO's own interests with public opinion and the views of donors and technocrats. Mr Guebuza's main priorities for his presidency include strengthening the administration of justice, which is in paralysis, and cleaning up the corrupt and incompetent police force. In addition, there will be continued strong commitment to poverty reduction and other social and economic policies established by the previous government.

Politics is polarised between FRELIMO and Mozambique's only significant opposition party, Resistência Nacional de Moçambique (RENAMO), as no other parties have won seats in parliament. Relations between them remain fractious, particularly as RENAMO is still smarting from its electoral losses. Tough law-and-order policies point to potential conflicts over the issue of RENAMO's remnant militia forces.

FRELIMO has ruled for more than 30 years despite a series of prominent corruption and murder scandals that have highlighted the impunity of its ruling elite. Unresolved political problems include ethnic and

regional divisions, the belief that FRELIMO and the state elite are excluding others from political power, and a poverty level that still ranks the country among the worst in the world in terms of human development, in spite of high economic growth in recent years.

#### ***1.1.4 Governance***

Governance is generally weak. There is reported widespread corruption in the absence of appropriate public financial management systems and public procurement of goods and services, and against a background of pitifully low wages in the public sector. The lack of resources is also reflected in the weakness of the judiciary system and law enforcement institutions, which in turn has serious implications for the rule of law and human rights. In spite of improvements, the human rights situation remains weak, with several areas demanding continued attention and reform. These governance issues have both political and economic implications. Freedom of the press was granted by the 1990 Constitution. The media is now becoming more open and outspoken than previously, and is helping to create conditions for a critical debate of society. One big setback in this context was, however, the November 2000 murder of the famous investigative journalist, Carlos Cardoso.

A public sector reform programme was launched by Decree 15/2000 of 20th June which legalized and recognized local (community) authorities giving new responsibilities and duties at community and state level. Other activities include an ongoing review of the EGFE (General Statutes for Civil Servants), the implementation of SIFAP (System for Training in Public Administration) and the rehabilitation and construction of buildings for district administrations. New ethics codes have been introduced for government employees in management positions. The State Administrative Inspection was established to deal with malpractices and breach of rules. The Integrated Strategic Plan for Justice which deals with judicial reform was completed in 2001. The Government is also attempting to strengthen budgetary procedures and develop detailed of operational instruments for budget implementation.

## **1.2 INSTITUTIONAL FRAMEWORK AND SYSTEM OF GOVERNANCE**

### ***1.2.1 Constitutional Framework***

Mozambique approved its first Fundamental Law the same year that independence was officially declared in 1975. It was based in one-party state and provided limited fundamental rights. A new multiparty democracy Constitution was adopted in 1990, forming the bases for the negotiations that led to the 1992 Peace Agreement. The 1990 Constitution abolished capital punishment, granted the right to freedom of the press as well as freedom of expression and association and all forms of professional association and union activities and the right to strike. The law strengthened the existing individual rights which allowed the adoption of new framework laws such as the Parties Law, the Press Law and the Right of Association Law. It also granted for the first time the fundamental right to the environment based on which the Framework Law on Environment was adopted in 1997. In 1999 a new process of constitutional review was initiated which was only concluded in 2004 due to lack of agreement between FRELIMO and RENAMO.

Mozambique is therefore governed by the Constitution adopted on 16 of November 2004 which widens the rights of citizens and sets up two new sovereign bodies: the Council of State and the Ombudsman (*Provedor de Justiça*). The Council of State is the advisory body of the President and shall be consulted before dissolution of the parliament; declaration of war, referendum and general elections. The Ombudsman is an independent body which safeguards, through informal means, the fundamental rights of citizenship and ensures that public administration is governed by principles of legality and justice.

### ***1.2.2 Governmental system***

The Republic of Mozambique is a Unitary State of Law (Constitution, Art. 3) based on the principle of separation of powers. It has five bodies of sovereignty: President; Parliament; Government; Tribunals and Constitutional Council. The legal power is shared between the Parliament, the Council of Ministers and

the Government. Laws and resolutions are enacted by the Parliament who may authorise the Council of Ministers to legislate through Law Decrees. The Government can adopt regulatory decrees. All the legal acts shall be published in the Official Journal. The President is entitled to adopt Presidential Decrees.

The constitution therefore separates the functions of the executive, the legislature and the independent judiciary. It provides for an electoral system based on a variant of proportional representation, with a majority voting system for the presidential election and a proportional system allocating parliamentary seats on the basis of the percentage of national votes that a party receives. As with the election of the president, the unicameral 250-seat legislature, the *Assembleia da República*, is elected by popular vote every five years. The power of the executive remains considerable however, extended by two "Ministries in the Presidency" dealing with defence and security affairs, and parliamentary and diplomatic affairs.

With respect to local government, there are 11 provincial governments, including Maputo City (which has the status of a province). These are non-elected branches of the civil service, and governors who are appointed directly by the President. Elected municipal government was introduced in 1998 for 33 major cities and towns as part of reforms to provide representative government and promote the decentralization of political authority. Municipal elections were last held on 19 November 2003.

### **1.2.3 Legal framework**

The judicial power is shared between the Supreme Court, the Administrative Court and judicial courts. The Constitution foresees the existence of a maritime court which was created by Law 5/96 but has to date not been established. The judicial system in Mozambique is close to paralysis and there is a severe shortage of qualified legal personnel and a substantial backlog of cases. Enforcement of contracts and legal redress cannot be assured through the court system. Efforts are being made to address these issues, however substantial improvement in many of the problems of the justice system are thought to be unlikely in the near future. Corruption in the justice system, and in the state prosecutor's office, has played a role in the failure to prosecute criminal activity in a range of high-profile drugs and fraud cases in recent years. Lack of legal reform to date has been taken as an indication that FRELIMO itself is divided over the issue; with corruption of officials, believed by many, to extend to senior levels of government and the party.

## **1.3 RELATIONS WITH THE MAIN EXTERNAL PARTNERS**

### **1.3.1 Membership of regional and international organisations**

Mozambique is a co-founder member of SADC (Southern African Development Community) which became effective in 2000, and whose main objective is the establishment of a free-trade area within the Southern African region. The country is also a member of the African Union and held the chair in 2003/2004. Mozambique is a member of the New Partnership for Africa's Development implementation committee and has committed itself to the peer review mechanism envisaged under NEPAD. Although Mozambique is a Portuguese-speaking country and a member of the CPLP (Community of Portuguese Speaking Countries), it is also a member of the Commonwealth. In addition Mozambique is a Member of the African, Caribbean and Pacific Group of States, which have signed the Cotonou Agreement with the European Community, and thus is granted preferential trade and aid links with the EU. The country is also a member of the Islamic Conference.

### **1.3.2 Activities of International Donors**

#### **1.3.2.1 Active donors**

Many bi- and multi-lateral donors are active in Mozambique. A significant number of EU Member States are represented with bilateral programmes. Switzerland, Norway, U.S.A., Canada, the World Bank, the IMF, the AfDB and the UN system also contribute substantial funding. The EC is the biggest single grant donor overall, with the World Bank providing significant amounts of credit funding on IDA terms.

**Table 1: Focus of EU Member States bilateral donor programmes**

<b>Country</b>	<b>Main area of interventions</b>
Austria	Agriculture and rural development, water, good governance
Denmark <sup>1</sup>	Macro support, good governance, education, rural development, energy, health
Finland	Education, health, good governance, agriculture and rural development
France	Education, health, agriculture and rural development, water
Germany	Agriculture and rural development, transport, energy, education, health
Ireland	Macro support, education, health, agriculture and rural development, good governance
Italy	Health, agriculture and rural development, water, good governance, education
Netherlands	Macro support, good governance, education, health, water, environment
Portugal	Education, agriculture and rural development, good governance
Spain	Health, education, agriculture and rural development, good governance
Sweden	Macro support, good governance, education, rural development, transport, energy
U.K	Macro support, health, education, rural development, good governance, transport
Norway <sup>2</sup>	Budgetary support, decentralization, governance, energy, health, fisheries

Notes : <sup>1</sup> withdrew from fishery sector support in 2000    <sup>2</sup> not an EU member state

### *1.3.2.2 Role of donors in the economy*

Between 1997 and 2003, Mozambique's foreign aid receipts were of the order of 12-19% of GDP, or \$500-700 million, including both program and project assistance. Mozambique is one of the continent's largest recipients of aid, earning US\$58 per inhabitant, more than double the sub-Saharan African average of \$26. During this period the nature of aid to Mozambique has changed in several respects. More than 50% of total public expenditure is foreign financed and attempts to reduce this level of aid dependence through revenue reforms have had only limited success. This can be seen in the following table. The aggregate fiscal deficit after grants has remained below 5% of GDP, with the exception of 2002 when the effects of the 2000 and 2001 floods were still being felt. However this masks the high deficit before grants which even in 2004 remains over 11% of GDP.

Table 2: Mozambique central government budget and donor contributions 2002 to 2004

Mozambique Central Government Budget (as a % of GDP)			
	2002	2003	2004
<u>Total Revenue</u>	26.0	22.4	19.6
Own revenue	14.2	12.9	12.3
Grants	11.8	9.5	7.3
<u>Total Expenditure</u>	34.1	26.5	23.7
Non-interest expenditure	32.6	25.3	22.7
Interest expenditure	1.5	1.2	1.0
<u>Aggregate deficit (after grants)</u>	8.1	4.1	4.1
Primary fiscal deficit	6.6	2.9	3.1
Net financing	7.2	4.3	2.3
External	6.3	4.2	2.8
Domestic	0.9	0.1	-0.5
<u>Aggregate deficit (before grants)</u>	19.9	13.6	11.4

Source: IMF, Article IV Consultations, 2003 & 2005.

In general programmed aid has gained in importance *vis-a-vis* project aid, rising from 23% of all aid in 1995/6 to 31% in 2001. Grants have grown relative to loans, increasing from 52% of all aid in 1995/6 to 69% in 2002. In addition, there were the two rounds of the Heavily Indebted Poor Countries initiative, in 1999 and 2001, which massively reduced Mozambique's external debt stock. Sectoral allocations remained relatively constant, except for health which rose from 9-11% in 1995 to 14% of all project aid by 2002.

#### 1.3.2.3 Joint Donor Programme for Macroeconomic Support

Donor coordination in providing direct budget and other forms of program support to Mozambique began in the mid-1990s. It was formalized in 2000 through the Joint Donor Program (JDP) for macrofinancial support, in which 6 donors participated. This coordinates budgetary support to the Government and ensures donor co-ordination in the main areas of policy dialogue: Poverty Reduction, Public Expenditure Management and Internal Revenue Collection. The JDP expanded rapidly to include 15 donors by 2004. The Programme is governed by a Memorandum of Understanding signed in April 2004<sup>1</sup>.

This sets out in great detail the procedural arrangements for budgetary and balance of payments support. Two specific features of this arrangement stand out; the agreement on a common Performance Assessment Framework (PAF); and the commitment to use government monitoring instruments, into which are integrated the monitoring variables of the Documento de Estratégia e Plano De Acção Para A Redução Da Pobreza e Promoção Do Crescimento Económico (Strategy Document for the Reduction of Poverty and Promotion of Economic Growth, otherwise known as PARPA).

The European Union is a member of the Joint Donor Programme for Macroeconomic Support (G-14) to Mozambique and the European Commission co-ordinated the Programme between November 2000 and May 2002.

<sup>1</sup> Source: WB IMF, Poverty Reduction Strategy Papers—Progress in Implementation, September 20, 2004



#### 1.3.2.4 *Trade agreements*

Mozambique has duty and quota free access to the European Union (EU) market, under the Cotonou Agreement and Everything-But-Arms (EBA) Initiative; and to the US market, under the Africa Growth and Opportunity Act (AGOA). Mozambique's access to the South African market is also relatively free. While the SADC Trade Protocol has very rigid rules of origin, they are not yet binding for Mozambique. Additionally, Mozambique has access to the Nordic countries (Denmark, Finland, Norway and Sweden), through the Nordic/SADC Accord, which provides market opportunities for SADC-made products on favourable terms. However Mozambique is not able to fully benefit from these trade preferences due to constraints on the supply side.

Mozambique is considering membership of the Southern African Customs Union. The main benefit would be duty and quota-free access to the SACU market without meeting SADC's restrictive rules of origin. However, the country is considering whether benefits of similar size can be secured through other ways, e.g. using the existing (or an improved) bilateral trade agreement with South Africa, which has more liberal rules of origin compared to SADC. SACU membership has two potential disadvantages. First, by joining SACU, Mozambique would adopt the present tariff structure of SACU, which serves largely the interests of South Africa. For example, South Africa produces some capital and intermediate goods and protects them heavily. Mozambique imports these products and prefers to have zero or very low tariffs on them. Second, trade diversion resulting from SACU membership may be large because SACU's common external tariffs (CET) are high and SACU accounts for only 26 percent of Mozambique's exports. On balance, it appears that the benefits have not yet been shown to outweigh the costs, and further study would be needed to determine whether Mozambique should join. Furthermore, the decision should take into account the outcome of the EPA currently being negotiated between SADC countries and the European Community (see below).

### 1.3.3 *EU Mozambique relations*

#### 1.3.3.1 *EDF national Indicative programme*

EU-Mozambique relations are based within the Membership by Mozambique of the ACP group of countries, and governed by the Cotonou Agreement. Support is provided through the European Development Fund, interventions under which are guided by the National Indicative Programme

There are currently four National Indicative Programmes of the 6th, 7th, 8th and 9th EDFs underway. These Programmes correspond to different social and economic development stages in Mozambique and, as such, to different areas of intervention and different programming instruments. The estimated distribution of the 6th, 7th and 8th EDF (ME823) by area of intervention was as follows: transport infrastructure 33.5%; macro-economic budgetary support 33.4%; health 7.1%; governance 6.6%; rural development 6.5%; water 4.9% and others 6.1%.

The National Indicative Programme of the 9th EDF was signed in February 2002 with the main objectives being to support the consolidation of democracy and the improvement of human rights and support implementation of the poverty reduction strategy, in order to contribute to the alleviation, and eventually to the eradication, of poverty.

The NIP addresses Mozambique's needs in the areas of macro-financial support, transport infrastructure and food-security and agriculture and as they correspond to the Government's and the European Community's priority areas. The 9th EDF 9 Envelope A is providing € 274 million and Envelope B will in addition provide € 55 million to cover unforeseen needs (indicated in the Cotonou Agreement, Annex IV, Article 3.2b). The indicative allocation of this envelope to the elements of the strategy is proposed as follows:

- Transport infrastructure, (25-35%)
- Macro-economic support (45-55%)

- Food security and agriculture (0-15%)
- Other programmes (includes Health and HIV/AIDS, governance etc) (10-15%)

Traditionally, macro-financial support and transport infrastructure have been financed from the EDF, and food security and agriculture from budget line funding. EC budget lines may be used to finance specific operations, in particular for food security within the focal sector food security and agriculture, and for human rights and democratisation. The major intervention is as in the past, a Multi-Annual Food Security Programme. Indirectly the focal sectors of transport infrastructure (Integrated Road Sector Strategy) and macroeconomic support are also contributing to the development of the fisheries sector. Both focal sectors will also support trade policy reforms.

Mozambique has been selected as a focus country for 2002-2004 support from the European Initiative for Democracy and Human Rights activities under which it may draw on EDF funds. The 9<sup>th</sup> EDF also includes the "Investment Facility" as a financing instrument managed by the European Investment Bank, although this does not form part of the Indicative Programme.

#### *1.3.3.2 Trade preferences*

Mozambique receives a special trade preference from the EU under the current Everything But Arms initiative. In February 2001, the Council adopted the so-called "Everything But Arms" Regulation" (Regulation EC 416/2001) granting duty-free access to imports of all products from least developed countries without any quantitative restrictions, except to arms and munitions. At present, 49 developing countries - Mozambique being one of them - belong to this category of LDC's. Only imports of fresh bananas, rice and sugar are not fully liberalised immediately. Duties on those products will be gradually reduced until duty free access will be granted for bananas in January 2006, for sugar in July 2009 and for rice in September 2009. In the meantime, there will be duty free tariff quotas for rice and sugar.

#### *1.3.3.3 Economic Partnership Agreement*

The ACP countries and the EU have a long and preferential relationship governed today by the ACP-EU Partnership Agreement, signed in Cotonou on 23 June 2000 and concluded for a period of 20 years. The European Partnership Agreement (EPA) negotiations are taking place in the framework of the Cotonou Agreement, in response to the anticipated need to respond to WTO obligations for tariff reduction as part of the Doha round of negotiations. The policy provides for the negotiation, before the end of 2007, of new regional trading arrangements, compatible with the rules of the World Trade Organisation (WTO).

Formal negotiation of EPAs at the level of all ACP countries started in September 2002. Since October 2003 there have been launchings of regional negotiations with some of the six ACP regions: (1) Central Africa in October 2003; (2) Western Africa also in October 2003; (3) with a number of countries in Eastern and Southern Africa (ESA) in February 2004; (4) the Caribbean in April 2004; (5) with seven members of the Southern African Development Community (Mozambique being one of the participating countries) in July 2004; and (6) with the Pacific in September 2004.

For all the six EPA negotiations, road-maps for the negotiations have been agreed which detail the organisation and the bilateral negotiating structure, priority issues and indicative schedule of negotiations for the entry into force of the EPAs on 1st January 2008. In all of these documents, the question of the regional integration objectives and agenda and their link to the EPA process has been defined as a first priority for technical talks. Technical discussions are now on-going with the six ACP regions in order to make the EPAs instruments for regional integration and development.

The SADC-EU negotiations of the Economic Partnership Agreement (EPA) were launched in Windhoek, Namibia on July 8th, 2004, and the first negotiation meeting at senior official level took place on December 7th, 2004 in Brussels. Countries negotiating the EPA with the EU under the SADC

configuration are Angola, Botswana, Lesotho, Mozambique, Namibia, Swaziland and Tanzania, while South Africa participates as an observer.

In 2005, EPA negotiations with SADC countries entered into a substantive phase. The second Senior Officials meeting which took place in Gaborone on 28 April 2005 agreed to finalise a report on SADC Trade integration in view of establishing the starting line for the future EPA. This report proposed various options for dealing with issues related to multiple memberships in trade arrangements in Southern Africa, reciprocity and differential treatment in the future agreement. Both sides also discussed progress reports on SPS and TBT with a view to facilitate SADC compliance with EU legislation. Finally both sides discussed organisation of future EPA negotiations notably deciding to open negotiations on issues such as Rules of Origin, Trade Facilitation and Customs Cooperation.

The year 2006 is crucial for the process. By the end of 2006, negotiations should have covered all issues relevant for the EPA and an outline EPA should be agreed on. This will leave one year for finalising the talks, revisiting areas of disagreement and reaching compromises. By then it should also be clear how to deal with possible delays due to ratification requirements by SADC and EU member states.

Certainly the prominent position of South Africa as a trading partner creates some threats and opportunities for Mozambique in terms of the EPA process, especially since South Africa has formed a customs union with the SADC members Botswana, Lesotho, Namibia and Swaziland, whose common customs schedule largely reflects South African priorities. This to a large extent constrains the pattern of residual protection against imports from the EU after the EPA has been negotiated. However it is notable that the EU is also rapidly emerging as a more important strategic trading partner for Mozambique. In the negotiations, the EC has underlined the need to rationalize the regional network of overlapping trading arrangements, and reiterated its availability to help the region in its own regional integration efforts.

## 1.4 BUDGETARY AND FINANCIAL FRAMEWORK

### 1.4.1 State budget breakdown income and expenditure

Table 3: Mozambique: Government Revenue, 1999-2004

	1999	2000	2001	2002	2003	2004
(In billions of meticaís)						
Total revenue	6,207	7,535	9,469	12,057	14,714	16,838
Tax revenue	5,733	6,862	8,400	10,629	13,629	15,598
Taxes on income and profits	867	1,034	1,519	2,116	3,236	3,538
Companies	415	372	542	816	1,281	1,124
Individuals	452	662	977	1,300	1,955	2,413
Taxes on goods and services	3,638	4,314	5,169	6,404	7,799	9,416
Turnover tax	917	...	...	...	...	...
Value-added tax	1,397	2,914	3,572	4,588	5,366	6,434
On domestic production	572	1,201	1,629	1,967	2,363	2,639
On imports	825	1,713	1,943	2,621	3,004	3,795
Consumption taxes	565	629	773	952	1,128	1,319
Tobacco	46	91	143	162	183	228
Beer and soft drinks	269	326	378	470	535	597
Other domestic goods	18	5	1	3	3	1
Imported products	231	208	250	317	407	492
Tax on petroleum products	759	771	824	865	1,305	1,663
Taxes on international trade	1,046	1,279	1,477	1,851	2,229	2,284
Other taxes	183	235	235	258	366	360
Stamp taxes	92	112	123	139	173	204
Poll taxes	3	4	5	6	6	6
Other taxes and duties 1/	88	120	108	114	187	150
Nontax revenue	474	672	1,070	1,428	1,085	1,241
Rents from real estate	111	0	0	110	102	83
Fees and charges	50	62	71	78	196	116
Social security contributions	112	168	203	278	306	408
Nonfinancial enterprise profits	0	6	11	28	114	86
Fishing license fees	60	58	98	91	0	51
Net privatization revenue	17	100	341	294	0	0
Custom fees	...	...	...	...	13	10
Royalties	...	...	...	...	11	43
Other nontax revenues	124	278	346	549	366	498

Source: IMF Country Report No. 05/311, August 2005

**Table 4: Mozambique: Government expenditure on the Social Sectors as defined in the PARPA, 1999-2004**

	1999	2000	2001	2002	2003	2004
					Est. 2/	Est. 2/
	(In billions of meticasi)					
Total expenditure (excluding bank restructuring costs and interest payments)	12,491	14,493	22,517	23,456	28,385	30,228
Total actual/budgeted expenditure in PARPA priority sectors	6,895	10,794	13,774	15,323	18,138	19,134
Education	1,795	3,141	4,874	4,217	5,734	6,252
Primary	1,410	2,727	3,875	3,608	4,825	5,310
Postprimary	384	414	1,000	610	908	942
Health	1,493	2,038	2,080	2,953	3,009	3,295
HIV/AIDS	0	6	110	188	85	139
Infrastructure development	1,481	2,490	3,643	3,861	3,917	4,142
Roads	...	...	1,881	1,860	3,122	3,188
Sanitation and public works	...	...	1,763	2,001	795	953
Agriculture and rural development	583	994	707	1,243	1,391	1,318
Governance and judicial system	991	1,244	1,615	1,900	2,668	2,881
Security and public order	722	843	1,048	1,267	539	1,648
Governance	60	142	244	235	1,590	523
Judicial system	209	258	323	399	539	710
Other priority areas 3/	552	882	745	962	1,135	1,121
Social actions	69	192	196	211	199	200
Labor and employment	55	56	74	117	85	121
Mineral resources and energy	428	634	475	633	852	801

Source: IMF Country Report No. 05/311, August 2005

Evolution of Government revenues and expenditures to 2004 are shown in Tables 3 and 4. Government income is increasing year by year, with an increase in revenue collection, a preliminary report on the budget outcome for 2003 shows that domestic revenues were 14.3 percent of (estimated) GDP, a rise of 3%. The largest revenue gain has come from the introduction of the value added tax (VAT) in 1999, replacing an inefficient and ineffective sales tax. As a result, taxes on goods and services increased to 7.6% of GDP, compared to 6.1 percent five years earlier. Income tax revenue also increased by a full percentage point over this timeframe, to 3.1% of GDP, following major tax reforms enacted in 2002 and 2003. Revenue from taxes on international trade has been relatively stable at about 2% of GDP for the past five years, despite reductions in the maximum import duty rates. Trade taxes now account for 16.5% of domestic revenue. In 1995, the corresponding figure was 26.3 percent. Thus, the government has also sharply reduced dependence on trade taxes while boosting overall revenue through a combination of tax policy reforms and improvements in tax administration. More improvement is expected as the Government moves to establish a central revenue authority in 2006.

Government expenditure has been far higher than domestic revenues. In 2001 and 2002, expenditure amounted to 34% of GDP. This fell to just under 30% in 2003. The medium-term expenditure programme foresees a continuing decline to less than 26% in 2007. Even at expenditure of 30% of GDP, the government has less than \$80 per person to spend each year. This fiscal resource constraint puts a high premium on careful prioritization, efficient design, and effective administration of all government programs.

The substantial budget deficit is largely made up from donor funding. Although the budget deficit (before grants) was extremely high in 2003, at 15.4% of GDP, this is an improvement over the previous two years when it reached 20% of GDP. Even so, it is much higher than the deficits incurred in the late 1990s, which averaged 10-13% of GDP. Donor grants totalled 10.6% of GDP in 2003. Given the large net inflow of donor support, the budget programme is adequately financed without creating large macroeconomic imbalances. The IMF projects that aid flows will be stable over the medium term at about US\$660 million per year. This dependence on donor funding is a major risk factor, yet it is also an important restraint mechanism that helps to keep the macroeconomic program on track.

Net domestic borrowing was negligible in 2004, following three years in which the government had to issue bonds totalling 4.4% of GDP to finance the restructuring of two large commercial banks.

In early September 2005 the IMF held discussions with the government on the framework for the 2006 budget, which exposed growing tensions between the two over the management of public finances. The debate focused on recurrent expenditure, with the IMF pushing for much lower ceilings for wages and domestically funded investment. The government resisted, however, arguing that following the substantial expansion of social services in recent years due to donor funding, a higher overall recurrent expenditure bill was necessary to ensure the effective operation of these services. Although initially it seemed that a compromise was going to be agreed, in late September the government released its own budget framework with recurrent expenditure figures much higher than those agreed with the IMF. Under the proposed budget, current revenue is projected to increase from 13.7% of GDP in 2005 to 14.8% of GDP in 2005. This sharp rise in revenue should offset the proposed increase in the wage bill from 7.2% of GDP to 7.5% of GDP. External resources are also predicted to rise from 13.6% to 14.6% of GDP, owing mainly to the inclusion of donor funds that were previously “off-budget” rather than to higher overall inflows.

#### *1.4.2 System for dispersal of funds*

After the 2004 elections, there was some institutional reform among state agencies and departments responsible for public finances. Consequently, the Ministry of Planning and Finance, the government institution previously in charge of public finances, was divided. Today the central government institution in charge of public finances is the Ministry of Finance.

The Ministry is organized in agencies, which include the Finance General Inspection; the National Treasury Directorate; the National Budget Directorate; the Public Accounts Directorate and the National Patrimony Directorate. At the provincial level, the Ministry of Finance is represented in each province by a Provincial Directorate of Finance.

It is intended that the division of functions should respect the need for the integrated operation of the PARPA, the CFMP, the PES and the Budget (OE) as a ‘*processo único*’ (single process). The main budgetary and accounting systems in Mozambique are as follows:

- The State Budget Subsystem, which governs the preparation of the State budget, the preparation of the budget bill for submission to the Legislature; and the evaluation of the budget submissions of state agencies and institutions.
- The Public Accounting Subsystem, which has as its object the production and the maintenance of the records of transactions carried out by state agencies and institutions, and their effects on the State’s assets. Among other things, it governs the execution of the State budget and preparation of the State General Account (Conta Geral do Estado).
- The Public Treasury Subsystem which governs the process of financial programming, and the management of disbursements and payments in relation to the State Budget and the State treasury position. The subsystem also deals with the preparation of public financial statistics and the management of internal and external public debt.
- The State Patrimony Subsystem governs the coordination and management of the state’s assets, the organization of the information regarding the inventory of State assets and preparation of the respective inventory.
- Internal Patrimony Subsystem, which governs the inspection of the correct use of public resources, of the application of accounting rules and methods, and of compliance with legal norms and procedures.

Mozambique’s fiduciary accountability can at best be described as weak, although the Government is taking measures to improve it. World Bank/EU/DfID assessment framework rated Mozambique with 4 out of 16 in one assessment, and less than 5 out of 30 in another. Both are substantially less than the sub-Saharan African average. The weakest areas identified were accounting, auditing and procurement.

Over the past years, a number of steps have been taken in order to include all revenues and expenditures of the State in the budget and in financial reports. Yet, the issue of the so-called “off-budgets” issue continues to be a problem. There are still a number of domestic sources of revenue which are not included, such as user fees in Health and Education, and some government-controlled institutions which enjoy financial autonomy, even without a legal basis. However the biggest part of the off-budget problem relates to donor funds. The Ministry of Finance collects data from donor organisations, but they are often submitted in formats which are not suitable for including the information in financial reports because the classification is not compatible with the accounting system.

## **1.5 NATIONAL DEVELOPMENT STRATEGY**

The national development strategy is focused on poverty reduction, and is embodied in the Documento de Estratégia e Plano De Acção Para A Redução Da Pobreza e Promoção Do Crescimento Económico (known as PARPA).

In April 2001 the Government of Mozambique approved the final strategy document for poverty reduction, PARPA 2001-2005. The core objective of PARPA is to substantially reduce absolute poverty levels from 70% of the total population, in 1997, to less than 60% in 2005 and less than 50% by the end of 2010. The strategy aims to establish an enabling environment for investment and productivity improvement, and to achieve an average annual growth rate of GDP of 8%, combined with low inflation. The strategy includes policies and programmes in six priority areas for poverty reduction: i) education; ii) health; iii) agriculture and rural development; iv) basic infrastructure; v) good governance; vi) macro economy and financial management. The Government is committed to increasing public expenditure, particularly on social sectors, agriculture and rural development, and basic infrastructure. At the same time, the strategy covers other basic dimensions of poverty, including gender, vulnerability and environment. The impact of the PARPA is seen in the increasing allocation of budget to priority sectors with expenditure in these areas rising from 13.3% in 1999 to about 19.1% of GDP in 2001.

## **1.6 MACRO-ECONOMIC FRAMEWORK**

### ***1.6.1 Macroeconomic situation***

The basic economic features of the Mozambican economy are shown in Table 6. Over the last decade, Mozambique achieved one of the highest rates of economic growth in the world as a result of political stability, favourable economic policies, large foreign investment flows, re-integration into regional and global markets, and generous support from the international community. Mozambique's economic growth averaged an impressive 8% over the period 1996 to 2003.

**Table 5: Basic facts on Mozambique (World Bank, 2005)**

Population:	19 million
GNP per capita:	US\$ 240
Growth 1990-99:	6.3 % per annum
Aid (ODA) as % GNP:	13.2 %
Debt as % GNP:	84 %
Government spending	24% (2004)
Export performance	22% annual growth
Inflation (1/01/05)	8%
Human Development Index:	0.341

Between 1996 and 1999 inflation fell to single digit figures and the annual growth rate of real GDP was above 10%, while investment reached an average of around 27% of GDP. The annual average growth in private consumption was around 7%. These favourable tendencies were the result of two key changes: the transition since 1992 to a period of peace and stability; and the economic reforms begun in 1987, which substituted an economy driven by market forces and private enterprise for one previously based on central planning. Through these reforms, policies were pursued to correct the principal domestic and external imbalances.

This macroeconomic performance suffered a setback in 2000 as a result of the floods at the beginning of the year, which particularly affected the centre and south of the country. These reduced growth to 1.5% but the economy recovered quickly, growing at 13.9% in GDP the following year, whilst inflation was still at 21.9% by the end of the year. In 2002, and according to the available data, economic growth reached 10%, while the inflation rate decreased to 9.1%. The efforts to replace infrastructure destroyed by the floods and the recovery of agricultural production, together with the start-up in aluminium production by Mozal, have made feasible a re-launching of the economy in 2001-2002.

According to Government and IMF projections, growth of 7% or more per year is likely to continue over the medium term. In addition, the economy is set to benefit from a second generation of comparatively smaller mega-projects. Agriculture will continue to expand strongly: staple food production is set to rebound in 2006 and output from commercial and export sectors should begin to show improved performance. Services, which account for around 43% of GDP, should benefit from higher domestic demand and growth in local companies supplying this market.

### *1.6.2 Structure of the economy*

There have been some important structural changes in output. Mozambique's economic growth implies an important transformation in the composition of its GDP. Table 6 shows how the structure of the Mozambican economy has changed since 1996. Growth has still been broadly based and, far from being dominated entirely by the mega-projects as the Mozal aluminium smelter and the construction of the gas pipeline to South Africa. New data have highlighted that agriculture has continued to play a strong role in GDP growth, together with other sectors which are more dependent upon the domestic market, such as services and government investment.

Although services remain the dominant sector (about 48% in 2004). The share of industry in total GDP increased to 27% in 2004 from about 16% in 1996, whereas the share of agriculture decreased to 23% from about 30% in the same period. The agricultural sector, however, still supports 80% of the



economically active population, whereas the service sector (including government) employs 15% of the workforce, with industry absorbing just 5 percent.

The statistics indicate the growing importance of the industrial sector, which now accounts for 32% of GDP, compared to 16% in 1996. This includes mining, manufacturing, electricity and water, and construction. Correspondingly, the share of agriculture in GDP declined from 30% to 22 percent, and the service sector went from 50% to 43 percent. These data include value added from implementation of large enclave projects. The structural shifts are much smaller if one focuses on output shares excluding the mega-projects. Figures compiled by the Ministry of Planning and Finance indicate that these projects added 9% to GDP in 2003. Excluding this component, agriculture's share of GDP would be 24.4 percent, whereas industry and services would have shares of 26.5% and 47.1 percent, respectively. The share of GDP from manufacturing would be 10.3 percent, up slightly from 8.7% in 1996. Nearly every major sector sustained growth rates of at least 5% per year over this period.

Table 6: Structure of Mozambican economy

Sector	1995	1996	1991	1998	1999	2000	2001	2002	2003
	Percentages of GDP, at current prices								
<b>Agriculture</b>	<b>29.0</b>	<b>30.5</b>	<b>30.2</b>	<b>27.2</b>	<b>25.5</b>	<b>21.7</b>	<b>21.9</b>	<b>19.5</b>	<b>22.4</b>
<b>Fishing</b>	<b>4.8</b>	<b>4.0</b>	<b>3.9</b>	<b>3.0</b>	<b>2.5</b>	<b>2.4</b>	<b>2.3</b>	<b>1.6</b>	<b>2.0</b>
<b>Industry</b>	<b>14.1</b>	<b>16.0</b>	<b>17.4</b>	<b>21.5</b>	<b>22.2</b>	<b>23.9</b>	<b>24.9</b>	<b>30.6</b>	<b>32.4</b>
Mining	0.3	0.2	0.3	0.3	0.1	0.4	0.4	0.3	1.3
Manufacturing	7.4	8.7	9.6	10.9	11.5	12.0	13.8	11.4	16.2
Electricity and water	0.3	0.5	0.8	2.0	2.8	2.2	2.1	3.1	1.6
Construction	6.2	6.6	6.7	8.3	7.7	9.3	8.7	15.9	13.4
<b>Services</b>	<b>52.1</b>	<b>49.5</b>	<b>48.5</b>	<b>48.3</b>	<b>49.8</b>	<b>52.0</b>	<b>50.9</b>	<b>48.2</b>	<b>43.2</b>
Commerce and repair Services	22.8	23.8	23.2	22.3	22.0	21.7	21.0	18.6	18.3
Restaurant and hotels	0.7	0.8	1.2	1.1	1.2	1.4	1.3	1.0	1.1
Transport and Telecommunicate.	8.9	8.6	8.9	9.2	9.5	9.3	9.6	11.1	8.7
Financial services	5.1	3.7	3.2	2.7	2.0	3.9	3.9	3.5	3.5
Real estate rentals and corporate	4.8	3.9	3.7	3.6	3.1	2.7	2.4	1.5	1.9
Services									
Government services and defense	5.5	4.4	4.5	5.1	6.9	7.4	7.7	6.3	5.4
Others services	4.3	4.1	3.7	4.3	5.1	5.5	4.9	6.2	4.4
<b>GDP</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Mozambique Country Report &amp; Profile (2005) : Economist Intelligence UNIT

### 1.6.3 International Trade

#### 1.6.3.1 Exports

Table 7 shows the main export commodities. Mozambique's exports comprise hydroelectricity, aluminium, prawns, cashew nuts, sugar, citrus, cotton, manufactured products and timber. In 2002, exports of goods represented almost 70% of export revenue, because of the exports of aluminium. The geographic position of the country in relation to neighbouring landlocked countries and regions has also historically made transport services - roads, railways, ports, shipment and transshipment - a central element of the economy and a significant foreign exchange earner. The Cahora Bassa Hydroelectric Dam, which has a capacity of 1,909 megawatts a year, is servicing a current annual national consumption of around 200 megawatts. Electricity is exported to Malawi, South Africa, Swaziland and Zimbabwe.

Since 1999, when Mozal, the large BHP-Billiton aluminium smelter, started operation, Mozambique's exports of goods have more than trebled. Aluminium now represents approximately 75% of manufacturing exports, 66% of exports of goods and 42% of total export revenue of Mozambique. Three "mega-projects" accounted for US\$681 million of exports in 2003; they were Cahora Bassa electricity, the Mozal aluminium smelter, and the SASOL natural gas pipeline.

Put together, exports of goods from fishing, agriculture and all other industries (except aluminium) add up to no more than two thirds of total aluminium exports. The main import goods include raw materials, spare parts, mining equipment, pharmaceuticals, consumer goods, chemical goods and crude oil. Fishery product exports generated US\$138m in 2000, but declined to US\$130m in 2001 and to US\$93.5m in 2002 comprising about 20,000 tonnes of fish products. The decline in international shrimp prices since 2001 has greatly reduced the importance of the sector.

**Table 7: Value of major export commodities in Mozambique 1997 to 2002**

	1998	1999	2000	2001	2002
	Export (fob; US\$ m)				
Aluminium	0.0	0.0	60.2	383.3	361.1
Shrimp	72.6	65.5	91.5	92.4	63.9
Electricity	36.2	62.9	67.0	57.3	107.4
Cashew	21.6	25.1	11.9	10.9	16.2
Totals	130.4	153.5	230.6	543.9	548.6

Source: Economist Country Profile 2005

Agricultural exports are constrained by the weaknesses of the rural sector, including poor infrastructure and an underdeveloped trading network. Aside from cashew nuts and cotton, other subsectors that could make a significant contribution to exports, such as copra, tea and tobacco are still stagnant. Sugar has great potential with sugar exporters to benefit from the United States of America quota allocations and also from the liberalisation of the European Union's trade regime applicable to least developed countries.

Exports of manufactured goods, which account for more than 10% of total exports, have performed well in recent years. Textiles, tyres and processed raw materials drive the sector.

Additional investment projects in titanium extraction and processing and garment manufacturing should further improve the balance of trade. Exports for 2003 were estimated at US\$795 million fob and imports for the same year at US\$1,142 billion.

Exports by country of destination are shown in Table 8. On the export side, the EU accounts for about 61% of export earnings. Belgium is the largest international export market. The share of the EU is rising because of its absorption of aluminium. In 2004 South Africa accounted for 13% of Mozambique's exports. Export trade with other African countries has increased in recent years. South Africa and Zimbabwe were once very significant markets for Mozambican exports. Zimbabwe accounted for 20% in 1998 but this had fallen to 6% by 2002.

**Table 8: Exports by Country of Destination, 2000-04**

	2000	2001	2002	2003	2004
OECD Countries	39.9	14.9	61.9	65.3	69.7
Belgium	0.3	0.1	35.7	43.5	0.6
Japan	4.3	4.2	1.8	0.9	0.9
Netherlands	1.0	1.0	2.6	2.8	60.9
Portugal	11.6	4.0	4.9	3.7	2.8
Spain	10.7	3.8	9.4	6.7	2.5
United Kingdom	0.9	0.0	2.5	2.9	0.2
United States	4.7	0.9	1.0	1.5	0.6
Other	6.4	0.8	4.0	3.3	1.2
Other countries	60.1	85.1	38.1	34.7	30.3
Malawi	3.0	1.7	5.0	3.1	3.3
South Africa	14.6	15.3	15.4	16.2	12.9
Zimbabwe	17.7	5.3	6.8	2.8	2.3
Other	24.8	62.8	10.9	12.6	11.8
Total	100.0	100.0	100.0	100.0	100.0
Total exports (millions of U.S. dollars)	364.0	703.6	809.8	1,043.9	1,503.9

Note: In% of total exports, unless otherwise indicated

Source: IMF, Republic of Mozambique, Selected Issues and Statistical Appendix, June 2005

Sources: Mozambican authorities; and IMF, *Direction of Trade Statistics*. Quoted from Meeuws (in World Bank 2005)

#### 1.6.3.2 Imports

Imports, shown in Table 9, amounted to US\$245million in 1998, and rose to over US\$ 1.2 billion by 2004, or 26% of GDP. A good part of the increase was generated by the mega-projects, particularly during their construction phases. Remaining imports also grew, however, by about 7% per year, in pace with GDP growth. The imports of textile and clothing products in 2002 (\$20 million) far exceeded exports by the sector (\$6 million). South Africa and the European Union are the dominant suppliers of imports. More than 50% is derived from the EU. South Africa used to be Mozambique's main supplier (57% in 1999) but its role had declined to some 30% of imports by 2002.

**Table 9: Imports by Country of Origin, 2000-04**

	2000	2001	2002	2003	2004
OECD countries	32.6	28.6	34.4	34.4	28.0
Australia	4.0	6.7	7.8	12.1	0.1
France	2.2	1.1	2.0	2.0	1.7
Japan	4.6	0.6	5.8	1.7	0.8
Netherlands	0.5	0.9	0.5	0.5	11.0
Portugal	7.6	8.4	6.0	3.6	3.3
United Kingdom	1.6	1.1	1.2	1.1	0.8
United States	3.5	1.8	5.1	6.0	2.4
Other	8.6	7.9	6.0	7.4	7.9
Other	67.4	71.4	65.6	65.6	72.0
Malawi	0.1	0.3	0.4	1.1	1.2
South Africa	50.0	40.5	32.3	37.6	41.4
Zimbabwe	0.6	0.8	1.1	0.6	0.5
Other	16.7	29.8	31.8	26.3	28.9
Total	100.0	100.0	100.0	100.0	100.0
Total imports (millions of U.S. dollars)	1,163.0	1,063.4	1,543.0	1,740.5	2,034.7

Not: In% of total imports, unless otherwise indicated

Source: IMF, Republic of Mozambique, Selected Issues and Statistical Appendix, June 2005

## 1.7 SOCIAL POLICY

### 1.7.1 *Poverty reduction*

As noted in previous sections, the central policy in relation to poverty reduction is the PARPA. Between 1996 and 1997 the first survey on household consumption (IAF I) was conducted basing on an approach of “cost of the basic needs”; this survey was representative at the national level. The survey showed a poverty incidence of about 69.4% at the national level, and also showed that poverty was more acute in the rural areas than in the urban areas. A second survey on the consumption of households (IAF II) was conducted between 2002 and 2003 and showed a poverty incidence of 54.1%, suggesting that poverty incidence at the national level has decreased by 15.3% during the six-year period between the two surveys: this provides hope that the PARPA targets (described above) might yet be achieved. Improvements are attributed to big improvements in the quality and the coverage of the road system.

### 1.7.2 *Education*

A broad range of indicators in the health and education fields suggest substantial improvements since the early 1990s. In education, the main improvements in figures are the gross enrolment percentage for lower primary, which rose from 56 to 100 percent, and the completion rate for lower primary, which rose from under 20% in 1990 to 36% in 2002, thus meeting PARPA goals.

Literacy has risen from 40% in 1996/7 to 45% in 2002/3. However the proportion of girls in the total number of pupils enrolled decreased slightly from 40.3% in 1995 to 39.3% in 2001, and no improvement is expected for 2002 (39.4%), which places this ratio below the expectations raised by PARPA. Whilst educational reforms have made rapid progress there is some evidence that the rate of development is slowing down.

### **1.7.3 Health**

The key health indicator is the infant mortality rate, which fell from 149 in 1995 to 101 in 2003, one of the fastest reductions observed in Africa. This suggests a significant improvement in living conditions. Health provision is considered within the PARPA, which allocates resources to the expansion of the network and delivery of primary health care, particularly for the poorest. The last five-year programme set out an ambitious decentralisation strategy, which required all provinces to execute the national health policy through locally managed services. There have also been major improvements in access to safe water in rural areas - from 12% of households in 1996/7 to 27% in 2002/3, and smaller improvements in urban areas.

## **1.8 BUSINESS AND INVESTMENT CLIMATE**

### **1.8.1 Conditions for business**

Mozambique's adverse business environment has been highlighted in the World Bank's new annual report, *Doing Business In 2006*. This ranks Mozambique 110<sup>th</sup> out of 155 countries reviewed. Mozambique scored poorly on a series of indicators (see Table 10) which evaluate the ease of doing business, including the enforcement of contracts, protection of investors, and the ability to close bankrupt or failing companies. Although the number of administrative steps required to set up a business (14) is somewhat better than the regional average, the length of time it requires (153 days) is among the highest of any of the countries covered in the study. The rigidity of the labour market, a frequent complaint of foreign investors and the IMF, is reflected by the difficulty of hiring and firing workers. Dismissing employees involves paying an average of 141 weeks wages, nearly three times the average for Sub-Saharan Africa.

Abuse of the country's generous labour laws has long been a source of complaint for both businesses and foreign aid organisations, and this has been exacerbated by evidence of collusion between fired employees and staff at the Ministry of Labour, which is in charge of enforcement, working together to extract fraudulent payments. The closure of failing or bankrupt companies, which is essential for redirecting resources to more productive areas of the economy, is also onerous in Mozambique, requiring an average of five years to complete. This is a particular problem in the case of companies that have ceased operating but have not yet formally dissolved themselves or fired their employees. Such "zombie companies" are a prominent feature of the economic landscape in Mozambique, and typically involve redundant former state companies whose workforces stage periodic demonstrations demanding years of unpaid back wages.

The adverse business environment has long been identified as a key obstacle to the expansion of growth and employment in the labour-intensive companies and businesses that Mozambique needs to promote poverty reduction. Officially, the government is committed to implementing reforms in order to simplify procedures and update regulations, many of the more dysfunctional of which were identified in an infamous "red tape" study undertaken in the late 1990s. However, progress in these areas has been slow, and the government has been urged by the IMF to accelerate its structural reforms if it is to maintain current rates of growth.

Table 10: Business environment indicators

Indicator	Mozambique	Region	OECD countries
<b>Starting a business</b>			
Procedures (number)	14	11	6
Time (days)	153	63	19
Cost (% income per head)	95.0	215.3	6.5
<b>Dealing with licences</b>			
Procedures (number)	14	20	14
Time (days)	212	251	150
Cost (% income per head)	148.6	1,597.3	68.0
<b>Hiring and firing workers</b>			
Difficulty of hiring index	83.0	48.1	29.5
Rigidity of hours index	80.0	63.2	50.0
Rigidity of employment index	61.0	53.1	35.7
Hiring cost (% of salary)	4.0	11.8	20.8
Firing cost (weeks of wages)	141.0	53.4	32.6
<b>Enforcing contracts</b>			
Procedures (number)	38	35	19
Time (days)	580	434	232
Cost (% of debt)	16.0	41.6	10.9
<b>Closing a business</b>			
Time (years)	5	3.3	1.5
Cost (% of estate)	9.0	20.0	7.6
Recovery rate (cents on the dollar)	13.3	16.1	73.5

Source: World Bank, *Doing Business in 2006*.

The IMF and other observers have long argued that a new wave of structural reforms is needed to tackle these obstacles to economic growth in order to maintain Mozambique's positive track record of high real GDP growth in the last decade, but it is not clear to what extent the new government is fully committed to this.

### 1.8.2 Foreign investment regime

The Ministry of Industry and Trade (MIC) is responsible for ensuring the investment and trade climate is appropriate to the needs of the country. Mozambique has a liberal policy on foreign investment. The degree of discrimination against foreign investors is regarded as minimal. A single law governs domestic and foreign investment, and roughly the same incentives are applied. There are, however, several areas in which the law differs:

- foreign investors can repatriate profits;
- minimum levels of investment required to qualify for fiscal incentive differ; for domestic investors the minimum is US\$ 5,000, for foreign investors it is US\$ 50,000;
- there are different rules in respect of rights to hold land titles;

- exemption from import duties on certain capital goods and raw materials, and
- fiscal incentives in the form of tax holidays.

Foreign investors benefit from the usual investment protection laws. Other than profit repatriation, they include the protection of property and indemnification in the event of nationalisation.

Export processing zones may be set up in specific geographical regions or for specific firms. Eleven of these had been approved by 2004. The benefits are duty-free imports of inputs and machinery, tax incentives (a 60% reduction in the corporate income tax rate), and exemption from VAT. In 2003, the Ministry of Commerce and Industry attempted to eliminate tariffs on imported inputs required for export production, limiting the purview to large firms (sales of USD250,000) and to certain sectors (textile, clothing and footwear; food processing; other agro-based industries; metal and mechanical; chemicals, plastics and rubber). Only 16 firms had been approved by 2004. Most of these, however, do not export, and so the effect of the change has been to increase the effective protection of domestic producers.

The Ministério de Indústria e Comércio (MIC) is therefore considering making tariff exemptions on imported inputs less complex, less onerous to apply for, and more targeted. However owing to the budgetary costs there is significant pressure to review and possibly develop a more selective approach to investment incentives. Already a number of “special incentives” have been reduced or eliminated, including those for sugar production (reduced), tourism (eliminated) and for investment in the Vale do Zambeze where the tax holiday has been shortened to 2010 rather than 2025.

The Mozambique government has concluded bilateral investment agreements with various countries, including some EU countries. These include clauses on double taxation relief, national treatment and the transfer of technology (through ‘best endeavours’). Currently there are efforts to reach more bilateral agents and in the promotion of joint ventures. The question of investment guarantees, to reduce the risk and credit costs of foreign investors, is being examined as a priority issue.

Mozambique is in the process of framing a new law on public procurement. In a 2002 report a World Bank team criticised the process of public procurement in Mozambique as failing on four main criteria – transparency, economy, efficiency and accountability.<sup>2</sup> It concluded that adequate legal and regulatory systems were needed. These would have to include monitoring authorities at both central government and provincial government levels, a directorate to oversee procedures and clear instructions to bidders. There was also a shortage of professional expertise and excessive centralisation. In particular the lack of transparency – the focus of the initiatives at the WTO – was a negative factor in project implementation and in allowing corruption.

Support for investors is provided by the Investment Promotion Center (CPI), which aims to attract and facilitate domestic and foreign investment and, ultimately, to stimulate job creation. The Investment Promotion Organisation (GAPI) which was the first non-bank financial intermediary in the country has provided credit and training from donor funds to semi-industrial fisheries and fish processing plants. GAPI provides loans from 30.000 USD and upwards, and may play an important role in financing support activities such as ice and processing plants for medium scale investors in fishing centres. GAPI has a decentralised unit in Quelimane, and is in the process of building two further units in Beira and Nampula. After approving investment licenses, CPI staff assists investors in obtaining other licenses and permits and provides fast-track set-up services to assist investors in obtaining land, utilities, and related services.

### *1.8.3 Investment finance*

After the government ended the inflationary spiral in the mid-1990s, and relaxed interest rate controls, the monetary system expanded rapidly. Despite this expansion, the private sector is still greatly

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<sup>2</sup> World Bank, *Mozambique: Country Procurement Assessment Report*, Washington DC: 2002



constrained by lack of access to financing. In 2003, the banking system held deposits amounting to 23% of GDP, but lending to the private sector amounted to just 8% of GDP. Credit to the private sector has declined in real terms by 25% since the two largest banks failed in 2001.

In addition, real interest rates are high for those who do qualify for loans. In 2003, the prime lending rate averaged more than 24 percent. With inflation averaging nearly 14 percent, the real interest rate for prime borrowers was about 10 percent. Also, the spread between lending rates and deposit rates is extremely high. In 2003, the average loan rate was 16-17 percentage points higher than the average deposit rate.

These indicators are signs of high overhead costs, high lending risks, and lack of effective competition in the banking sector. There was a banking collapse in 2001, requiring the Government to support the restructuring of two major banks. Since then although several banks have been recapitalized and restructured, the banking system is still burdened by a large volume of non-performing loans. This problem is due to poor lending practices in the past but is also rooted in fundamental weaknesses in the supporting institutional structure, including the absence of tradable title to land to serve as security, and problems with laws and systems for enforcing contracts and foreclosing on collateral. As long as banks lack effective recourse for recovering loans, access to credit will be a serious problem for private sector development and expansion of trade.

## **1.9 ENVIRONMENTAL POLICY**

### ***1.9.1 Environmental characterisation***

Mozambique has vast natural resources and only a limited share of these resources are currently being utilised. Still, soil erosion and degradation occurs and sanitation and water supply is frequently of poor quality. Conflicts over land and natural resources are becoming more frequent with increasing private sector activity in areas such as logging, fisheries, national parks, mining, and tourism. Environmentally related health problems are considered severe in urban areas. More than 50% of the urban population live with hardly any infrastructure in terms of water supply, sanitation, drainage, and road infrastructure.

A large proportion of the population, 40 to 50 percent, live in coastal areas, thus causing impacts in coastal environments. The coastal zone, which is approximately 2,770 km in length, is characterised by a wide diversity of habitats including sandy beaches, coral reefs, estuarine systems, bays, mangroves, and seagrass beds. Maputo, the capital city is the only city with a central sewage system for collection and treatment of domestic sewage, but only an estimated 50% of Maputo's sewage is treated, the remainder simply being emptied into rivers that drain into Maputo bay.

Industrial activities in Mozambique are mainly concentrated in the Maputo/Matola and Beira areas, Maputo and Beira being the two major ports in the country. Few industries treat their effluents in Mozambique, many of which contain toxic chemicals, and are discharged directly into canals, rivers and coastal waters. This includes un-quantified amounts of wastes containing heavy metals, including mercury, lead, chromium, manganese, nickel, and zinc.

Land-derived agrochemical and municipal wastes are also a major cause of pollution in Mozambique. Residues of fertilizers and pesticides from agricultural inputs in the hinterland enter main drainage systems and are washed into the sea where they have cumulative effects in the marine and coastal environment. At the same time, increased siltation resulting from deforestation in the hinterlands also impacts the coastal habitats by increasing the turbidity of the waters, and smothering habitats, flora, and fauna.

The main environmental issues are thus related to the urban environment as well as marine and coastal environment, with concerns over reduced shrimp stocks, pollution, loss of mangrove and other habitats, coastal erosion and threats to biodiversity. However, ecosystems in Mozambique are considered relatively well preserved compared to other countries in the region, probably due to the

fact that the country is less developed. On the other hand the potential for degradation of those sites is higher and would increase in the future in the view of the current development.

Specific sites are classified as marine “Hot Spots”, as they present a higher degree of degradation in relation to others within the country. These are shown in Table 11, and include Maputo Bay, Sofala Bank, Nacala Bay and Mozambique Island. Other sites such Bazaruto Archipelago, Quirimbas Archipelago, Inhaca and Matutuine Area, and Marromeu and Zambezi Delta are classified as sensitive areas. Only the Bazaruto and Quirimbas Archipelagos have been designated national parks, while Maputo Bay, Marromeu, and Inhaca Island are designated protected areas (reserves).

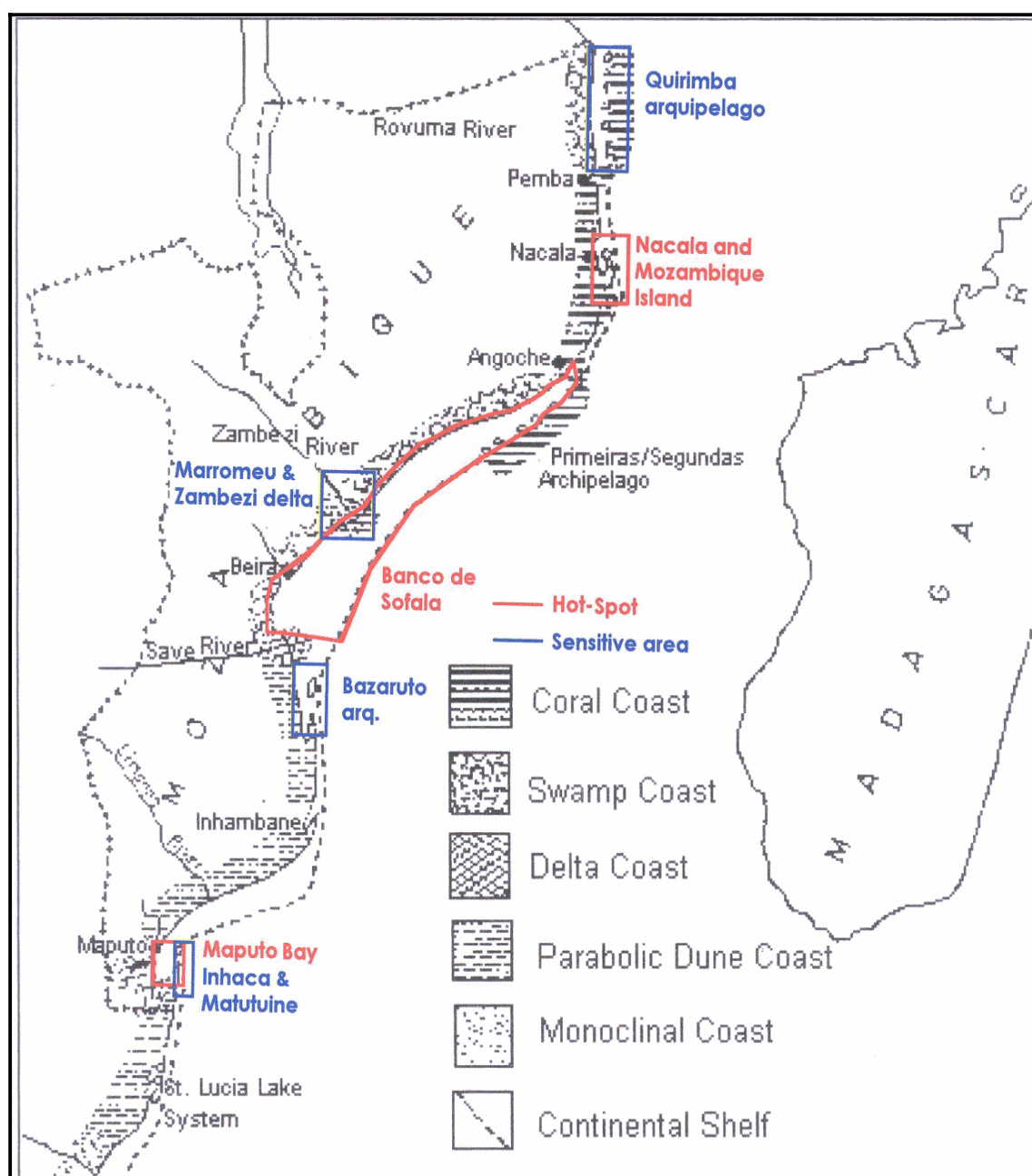
**Table 11: Hot Spots, Sensitive Areas and Issues of Major Concern**

Hot Spots	Sensitive Areas	Issues of Major Concern
<ul style="list-style-type: none"> <li>• Maputo Bay</li> <li>• Sofala Bank</li> <li>• Nacala Bay</li> <li>• Mozambique Island</li> </ul>	<ul style="list-style-type: none"> <li>• Bazaruto Archipelago</li> <li>• Quirimbas Archipelago</li> <li>• Inhaca and Matutuine Area</li> <li>• Marromeu and Zambezi Delta</li> </ul>	<ul style="list-style-type: none"> <li>• Modification of stream flow (abnormal river runoff, floods, draughts)</li> <li>• Loss and modification of ecosystems and ecotones (erosion, depletion of mangroves, destruction of corals and sea grass beds)</li> <li>• Overexploitation of natural resources (shrimp resources, demersal fisheries)</li> <li>• Use of destructive fishing practices (mosquito nets, dynamites, fish poisoning)</li> </ul>

Source: Hogue et al. 2002

Recently, an initiative to declare the Primeiras/Segundos Archipelago a national park was highly controversial. These islands are situated in the northern part of the Sofala Bank and are in the area of intense artisanal and industrial fishing activity. As the initiative was promoted by conservation and tourism interests, fishing interests were not taken sufficiently into account, which brought about strong opposition from the fisheries sector and a formal protest from the Ministry of Fisheries. A compromise was reached in that an integrated management plan will be prepared for the area, including conservation and sustainable use of resources, which is being coordinated by MICOA.

Figure 1: Coastal Environments (dashed line represents the 200 m depth)



Source: Hogue et al. 2002

### 1.9.2 *Environmental policy*

The Constitution sets up the general right of every citizen to a balanced environment and the obligation to protect and preserve it establishing that the State, together with the local municipalities and NGOs shall adopt environmental protection and conservation actions for the purpose of ensuring ecological equilibrium and the conservation and protection of nature (Art. 90). This obligation was first materialized on the Resolution 5/95<sup>3</sup>, which approved the Environmental Policy, leading subsequently to the Framework Law on Environment<sup>4</sup> (FLE)

The Ministry of Coordination of Environmental Affairs – (Ministério para a Coordenação da Acção Ambiental, MICOA) was established in 1994<sup>5</sup> and, as suggested by its name, aims at integrating environmental concerns into the different sectoral policies. The objectives of MICOA are *inter alia* the following: prepare and implement sustainable development policies and legislation in coordination with other sectors; provide capacity building to the other sectors in order to include environmental principles in their activities, projects and working programmes; and establish and develop cooperation agreements with similar institutions at regional and international level.

MICOA's main functions include (Art 3):

- Promote the management, conservation and sustainable use of natural resources, namely those common to different sectors;
- Review and update sectoral legislation in what concerns the use of natural resources;
- Establish the environmental management framework, including criteria and guidelines for the environmental impact assessment of development activities; and provide technical advice on social and economical projects which have environmental impacts.
- Advocate the establishment of environmental management units in the different sectors and strengthen their technical capacity;
- Perform environmental impact assessments, audits and inspection of the activities developed by the different sectors;
- Promote the establishment of a national network of environmental information involving different sectors and determine the state of the environment and propose sustainable standards for the use of natural resources.

Based on this framework several legal instruments have been adopted in the environmental field dealing mainly with water, wild species and ecosystem, land and soil, and mineral resources and mining activities. Some of the environmental legislation in force has a more horizontal nature covering environmental issues in general such as the environmental fund, the national council for sustainable development, the national institution and the council for the coordination of environmental disasters, and the regulations for environmental impact assessment, audits, and environmental control.

The environmental strategy in the fisheries sector, as set by Resolution 5/95, is to increase cooperation between MICOA and the Ministry of Fisheries regarding: i) the strengthening of institutional capacity at central and local level for the management of fisheries resources, considering the related environmental issues; ii) inclusion of environmental concerns on the fisheries legal framework; iii) training and capacity building within the elaboration and implementation of the human resources development plan; iv) development in collaboration with the artisanal fishers communities of sustainable management plans to solve local over-fishing problems; v) increase the efficiency of all existing fishing potential; vi) prioritise the development of commercial aquaculture of shrimp; vi) reduce the loss of the products after catch; vii) data collection and research aiming at introducing sustainable practices on fishing activities and aquaculture.

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<sup>3</sup> Resolutions 5/95 from 3.08.

<sup>4</sup> Law 20/97 from 01.10.

<sup>5</sup> Presidential Decree n° 2/94 from 21.12, and its objectives and functions were established by Presidential Decree n° 6/95 from 16. 11

The environmental policy also sets strategies and activities for the management and protection of coastal and marine ecosystems and the establishment of marine natural parks.

Recently Decree 05/2003<sup>6</sup> has created the Centre for Sustainable Development of Coastal Zones (CDS-ZC), under MICOA, with administrative autonomy, based in Gaza Province, and with a national range of action. CDS-CZ undertakes the coordination of research, technical assistance, training, awareness raising and implements pilot projects of marine, coastal, and wetland environmental management that may be used to the development of policy and law.

### *1.9.3 National Marine Parks*

There are two national parks which include the coastal zone.

The WWF is supporting the extension to the existing Bazaruto Community-Based Natural Resource Management project, which covers the Bazaruto Archipelago National Park of Mozambique. The previous phase of the project covers the 3-year period of 2003-2005, and the current proposal concerns the subsequent 3-year period of 2006-2008. Covering an area of 1,430 km<sup>2</sup>, comprising the five islands and surrounding waters of the Bazaruto Archipelago, then Park provides protection to the largest and only remaining viable population of dugongs in the Western Indian Ocean; five species of sea turtles; coral reefs; whales, dolphins and other marine animals; plus several endemic terrestrial gastropods and lizards. It is also an important bird area, in particular hosting significant aggregations of Palaearctic migrant water birds.

The Quirimbas National Park (QNP), is also financed by the national branch of WWF in Mozambique in association with other government agencies. A management plan for the park has been produced and a number of park rangers have been trained by WWF to be responsible for managing the day-to-day activities of the park. The concept of co-management is included in the Park's management plan through the support of multi-sector management groups representing tourism, park administration, communities and NGOs.

#### *1.9.3.1 WWF Global 2000 Eco-region Programme*

The WWF Eco-region approach supports conservation of biological diversity and ecological processes at a broad scale, linking habitats within the process of national development. The programme is part of the East African Marine Eco-region Project which (EAME) encompasses tropical such as the coastal zones of southern Somalia, Kenya, Tanzania, Mozambique and South Africa (south to Sodwana Bay), but does not include the western Indian Ocean island states of Madagascar, Comoros, Reunion, Seychelles and Mauritius, which form part of a 'sister island eco-region' (WIOIME).

The East African Marine Eco-region Project has a US\$2.5 million preparation fund and is establishing a five year Action Plan. Whilst the project is focusing on developing a regional network of marine protected areas (MPAs), it has five strategic components of relevance.

- Management and conservation of straddling stocks.
- Conservation of endangered species.
- Identification and addressing of key policy issues.
- Coastal livelihoods.
- Capacity-building in M&E and innovative approaches.

A total of 21 sites within the eco-region have been identified, with 8 considered to be globally important and 13 of importance at an eco region or sub region level.

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<sup>6</sup> Decree 05/2003 from 18.02

### *1.9.3.2 IUCN Strategy for the Conservation of Marine Turtles*

The IUCN supports the development of a strategy and action plan for the Conservation of Marine Turtles in the Western Indian Ocean. This is designed to address specific problems and gaps in the conservation of marine turtles in the western Indian Ocean under the context of the Global Strategy for Conservation (IUCN). Representatives and scientists from South Africa, Comoros, Eritrea, Kenya, Reunion, Mauritius, Mozambique, Seychelles, and Tanzania met in 1995 to develop these instruments for conservation.

### *1.9.3.3 African Coelacanth Ecosystem Programme (ACEP)*

The African Coelacanth Ecosystem programme was launched after the discovery of a substantial population of coelacanths near Cape St Lucia off the South African coast, where eighteen individuals have been identified. Since then, coelacanths have also been found in Tanzanian and Kenyan waters. The recent South African discovery prompted the formation of ACEP as a 'New Partnership for Africa's Development' (NEPAD) initiative. The member countries of ACEP are Tanzania, Comoros, Kenya, Madagascar, Mozambique, Seychelles and South Africa.

### *1.9.4 Adherence to international environmental treaties*

Presidential Decree 06/2000, Art. 3° gives power to the Ministry of Fisheries as the competent authority to liaise and promote contacts and cooperation agreements in the fisheries sector. Mozambique is a contracting party to several multilateral agreements in the fisheries sector of which the most relevant are briefly identified below.

At the international level Mozambique signed UNCLOS in 1982, the same year that it was adopted, and became a contracting Party in 1997 to both the Convention and the Agreement relating to the implementation of Part XI. It is not yet a Party to the Agreement for the conservation and management of straddling and highly migratory fish stocks but, in accordance with the national authorities, Mozambique has initiated the internal process of ratification.

With regard to the protection of the marine resources and coastal environment Mozambique became a contracting Party of CITES in 1981, eight years after its adoption, and in 1995 ratified the Convention on Biological Diversity. Only recently (2004), the RAMSAR Convention from 1971 was ratified.

Mozambique is a Party to the International Maritime Organisation since 1979 and in the field of pollution prevention and control has recently ratified MARPOL (2005) and is a contracting Party to the Basel Convention since 1997.

Mozambique has also ratified multilateral instruments in the field of safety at sea including SOLAS (1996) and COLREG (1991). It is also a contracting Party to several others adopted under the IMO but the specific date was not available. That is the case, for instance, of the Convention on Maritime Search and Rescue and the Convention on Standards of Training, Certification and Watchkeeping for Seafarers.

At the regional level Mozambique is a Party to the African Convention on the Conservation of Nature and Natural Resources since 1981 and ratified the Bamako Convention in 1999. Specifically in the field of fisheries and coastal environment it should be highlighted that Mozambique is a Party to the Nairobi Convention since 1999 and ratified the SADC Protocol on Fisheries in 2002.

In spite of their non-mandatory nature Mozambique is also a Party to the FAO Code of Conduct for Responsible Fisheries and the Rome Declaration for the Implementation of the Code, signed in 1995 and 1999 respectively.

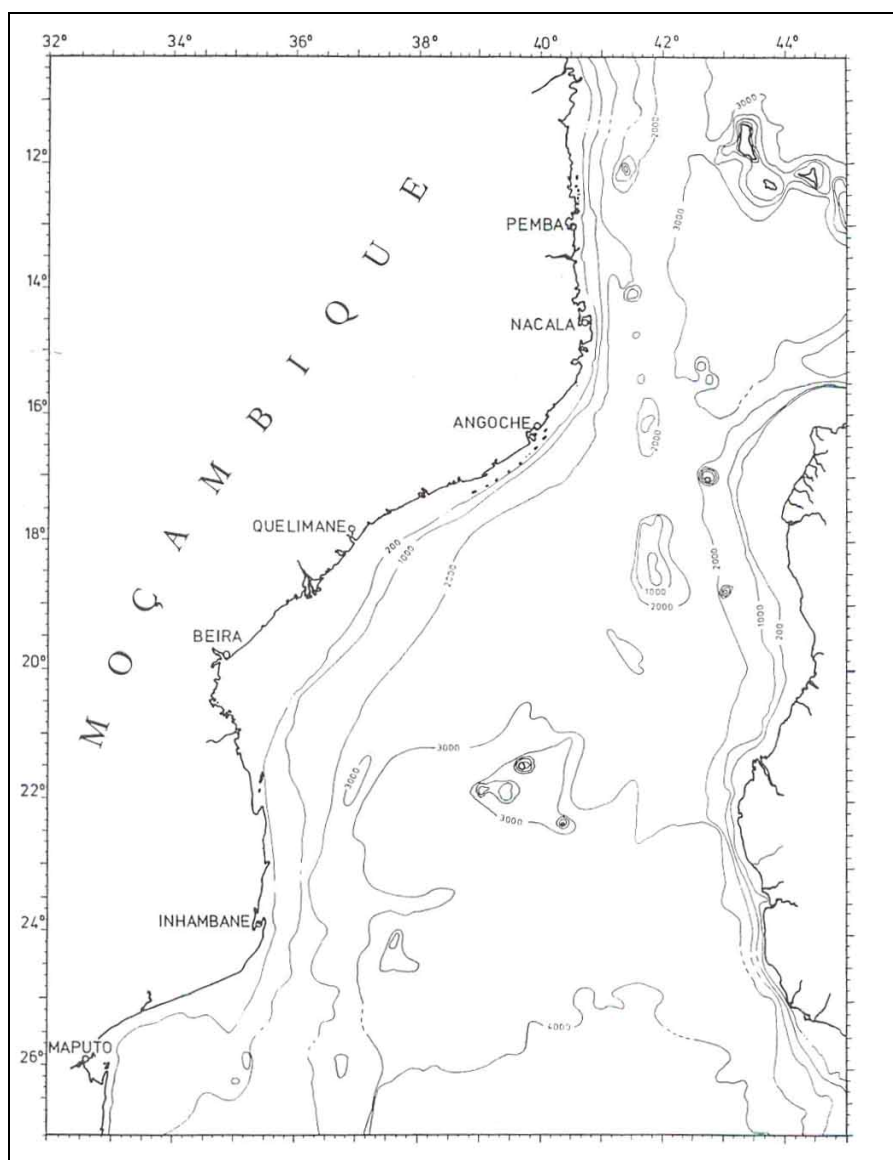
Mozambique is a member of the Conference of Ministers responsible for fisheries in the Portuguese speaking countries since 1995. With respect to regional fisheries organisations Mozambique is not a member of the Indian Ocean Tuna Commission. The implications of this are discussed in the evaluation section. Mozambique is however a member of the Southwest Indian Ocean Fisheries Commission (SWIOFC), which although it was established in 2004, is still not operative.

## 2 ANALYSIS OF FISHING SECTOR AND INDUSTRY

### 2.1 CHARACTERISATION OF COASTAL WATER BODIES AND THE ENVIRONMENT

#### 2.1.1 Oceanographic features and Coastal topography

Mozambique's coastline of 2,780 km borders a marine Exclusive Economic Zone of almost 580,000 km<sup>2</sup>, while inland waters cover another 20,000 km<sup>2</sup>, with Lake Nyassa and Cahora Bassa as the main inland water bodies. The continental shelf is generally very narrow, approximately 68,000 km<sup>2</sup> in area, but includes important shelf areas such as in the central region (Fig.2). This central region is called the Sofala Bank, extending from about Pebane to Inhassoro. Most of the industrial fisheries, dominated by trawlers targeting shrimp, are concentrated in this area, although smaller fleets operate in the Maputo Bay area and the Limpopo River mouth area in the Gaza province.



Source: Sætre & Silva 1982

Figure 2: Map of the Mozambican coastline and bathymetric contours in metres

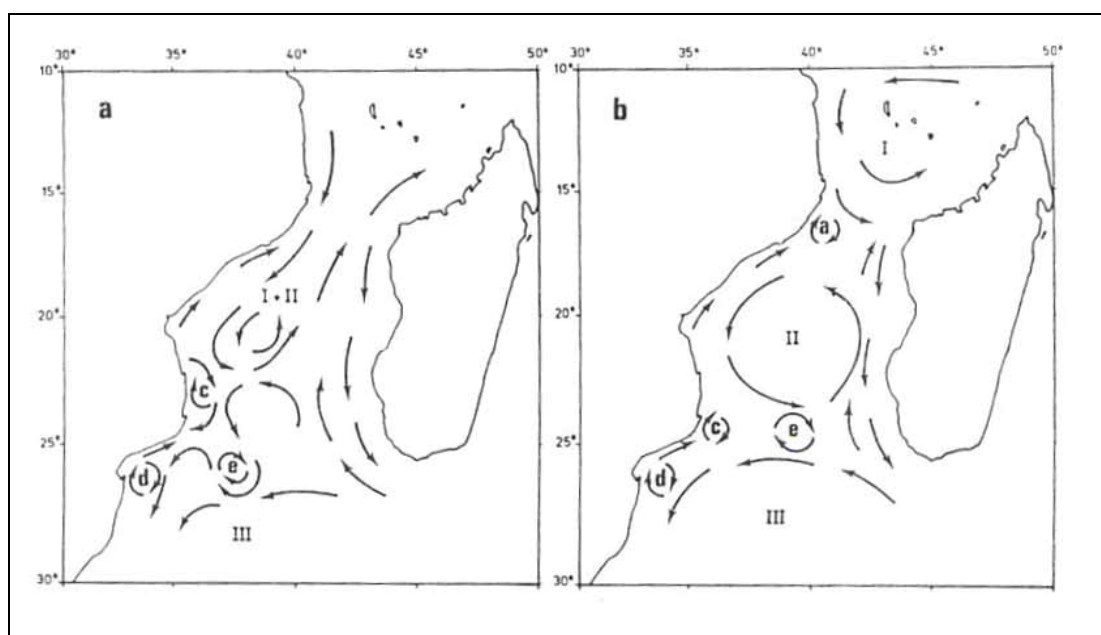
River run-off is important, draining an estimated 141 km<sup>3</sup> per year of water rich in nutrients into coastal waters, 85% of which into the central region of Sofala Bank. The Zambezi River alone contributes around 67 percent.

Surface water temperature of the sea varies between 25-29° C and its fauna is typical of that of warm water. Coral reefs extend along the Mozambique coast especially in Bazaruto, Nacala and Pemba, the Mozambique Island and Nacala and others are located further south. Mozambique protects some coral reefs, especially in Bazaruto Archipelago and Inhaca Island; however in the north, where the majority occurs, they are inadequately protected. The total mangrove coverage has been estimated at 500,000 ha, as a result of the many rivers that drain into the coast.

In the northern part of Mozambique, the winds follow the alternating monsoon system with NE winds during the southern summer and SW winds during the southern winter. Central and Southern Mozambique receives easterly prevailing winds and, especially during southern summer, southerly gales can seriously affect fishing activity.

The Mozambique Channel that separates Mozambique from Madagascar Island is about 400 km wide at its narrowest point. In the extreme north, Cape Delgado forms the dividing point of the Southern Equatorial Current. The southward flowing branch of this current, known as the Mozambique Current and further south as the Agulhas Current, which are considered to be two more or less independent currents. The main features of the coastal hydrography off Mozambique can be summarized as follows:

- Along the northern coast south to about 16°S coastal upwelling occurs, resulting in a southward coastal jet and a northward counter current during the northeast monsoon season.
- A retro-flexion of the southward Mozambique Current occurs between 22° and 25°S. This retrogression seems to be weakest during the northeast monsoon season and is followed by a feeding of the Mozambique Current with water from the East Madagascar Current.



Source: Sætre & Silva, 1982

**Figure 3: Schematic representation of dominant circulation patterns in the upper layers of the Mozambique Channel**

In Figure 3 above the left-hand figure represents the situation in southern winter and on the right, the situation during southern summer. I and II are anti-cyclonic gyres; a, b, c, d and e are cyclonic eddies.



These various cyclonic eddies are presumed to be areas of increased vulnerability of tuna to fishing, which is based on sightings of tuna shoals.

### *2.1.2 Legal extent and characteristics of the EEZ*

The Fundamental Law establishes the public domain over the maritime zone and that all natural resources found in the soil, subsoil, interior waters, territorial sea, platform continental and EEZ belong to the State (Art. 98°) which is responsible for determining the conditions of their use and exploitation safeguarding the national interests (Art. 102). The sovereignty of Mozambique over the 12 nautical miles Territorial Sea and 200 miles EEZ were both defined in 1976<sup>7</sup>, using the straight baselines already promulgated by Portugal<sup>8</sup>.

Law 4/96 established the current legal framework for the administration of the sea and maritime activities along the coast, complementing previous legislation and revoking contrary dispositions. Decree 18/01 from 3 July creates the National Institute of Sea and Borders (IMAF) under the Ministry of Foreign Affairs and Cooperation as an executive body for the coordination of activities over the sea and sea borders which is vested administrative and financial autonomy.

Article 4 of Law 4/96 defines the breadth of the territorial sea as 12 nautical miles measured from the baseline, and draws closing lines and straight baselines that supplement the normal baseline. The set of 28 points defined in the law create five straight baseline systems. In two cases islands and reefs are connected to mainland and in three cases bay-like coastal indentations are closed. Only two of the segments deviate by more than 15° of the general direction of the coast.

Article 5 establishes that where the Mozambican coast is adjacent to other country, in the absence of an agreement stating otherwise, the territorial sea is limited by the line which points are equidistant from the points that define the baselines of each of the countries.

The territorial sea of Mozambique is adjacent to the territorial sea of South Africa (south) and to the territorial sea of Tanzania (north). Mozambique has signed a Maritime Boundary agreement with Tanzania in 1998 which has entered into force in July 1993. The EEZ extends up to a distance of 200 nautical miles from the baseline (Art 9). Whenever the Mozambican coast is adjacent or opposite to the coast of other state the limit of the EEZ is to be established by agreement, or in the absence of an agreement, by international law (Art 10).

In the EEZ the State has the sovereign right to explore, use, protect and manage the living and non-living natural resources of the water, seabed and underground, as well as to undertake other activities for economic purposes and energy production from the water, the currents and the wind. The State will apply its right in what regards the protection and conservation of the marine environment, research and the establishment and use of artificial islands, installations and structures (Art. 11).

The EEZ of Mozambique borders with 4 countries and 3 islands under French sovereignty. The countries are: Tanzania, Comoros, Madagascar, and South Africa. The islands are Juan de Nova, Bassas da India, and Ile de France. With the exception of Tanzania, with which Mozambique established an agreement, all the boundaries are defined by UNCLOS, since Mozambique and the neighbouring countries and territories are all Part of the Convention. No indications of any border conflict were found.

Concerning the Economic Exclusive Zone (EEZ), the borders have not yet been agreed among neighbouring countries, but the basis for this definition of maritime borders is to be based on the UN Convention on the Law of the Sea (UNCLOS).<sup>9</sup> Negotiations concerning the delimitation of EEZ borders in the area are further complicated by political issues such as in the case of disputes between

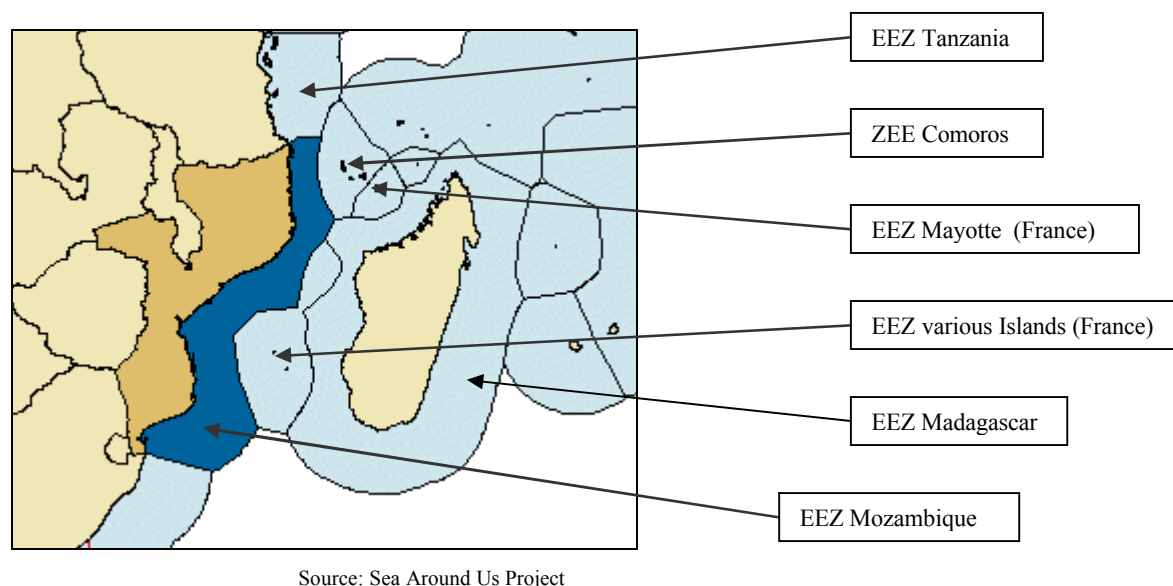
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<sup>7</sup> Law-Decree 31/76 from 19.08.

<sup>8</sup> Limits of the Sea N° 29 “Straight Baselines: Mozambique”, 12.11.1970

<sup>9</sup> The agreements between Tanzania and Mozambique were entered into in July 1993 - see [www.dtic.mil.whs/directives/corres/20051m\\_040201/tanzaniafinal.doc](http://www.dtic.mil.whs/directives/corres/20051m_040201/tanzaniafinal.doc).

Comoros and France over the island of Mayotte. The figure below shows that the situation is not straightforward in the area, implying complex negotiations involving several states.



**Figure 4: Schematic map of the EEZs in the Mozambique Channel area (approximate delimitations)**

### 2.1.3 *Principal maritime resources*

Many interests meet in the coastal zone, not only different sub-sectors of fisheries, but the expanding tourism industry, resources underground such as petroleum (Sofala Bank), gas (Inhambane), large titanium deposits (Zambezia). The predominant minerals in coastal areas may be grouped in three categories as follows: (i) energetic (coal, natural gas and petroleum), (ii) metallic minerals (gold, iron, copper and (iii) non-metallic minerals (marble and precious stones).

The delta of the Zambezi River accumulates large amounts of heavy-minerals deposits such as ilmenite, rutile and zircon; similar situations exist around the estuaries and deltas of other major Mozambican rivers, such as Limpopo, Save, Ligonha, Lurio and Rovuma. Accumulations of heavy minerals can also be found either on beaches or in sand dunes. The most promising deposits are those located between Quelimane and Quinga these are currently being exploited.

Mozambique launched its First Offshore Licensing Round for oil and gas in 2000, offering 14 blocks, mainly in the Mozambique Basin covering the shallow and deep Zambezi delta area. More recently in 2006, Anadarko Petroleum was awarded the exploration and production rights to Offshore Area 1 in Mozambique's second licensing round in the under-explored Rovuma Basin. The 2.64 million-acre block (10,680 km<sup>2</sup>), in northeast Mozambique, includes approximately 90,000 onshore acres and stretches offshore, where water depths extend down to 1,800 metres. The block's boundary borders Tanzania to the north and extends southward about 160 km.

This Offshore Area 1 where only two wells have ever been drilled is considered to have a high potential. Anadarko has been actively analysing seismic, well and other geologic data from the Rovuma Delta for the past three years and has concluded that the basin is similar in nature to the proven world-class petroleum systems of the Niger Delta, Mahakam Delta, and the Gulf of Mexico.

Another company, Eni, won the right to explore an offshore area known as Offshore Area 4 located in the deep waters of the Rovuma Basin, with a surface area of 17,646 km<sup>2</sup> and a water depth of 2,600 meters. Following Eni's strategy to identify new areas with high mining potential, Area 4 lies in a

completely unexplored and high-potential geological basin.

## 2.2 ANALYSIS OF FISHERY RESOURCES AND ACTIVITY

### 2.2.1 Main fishery resources

Mozambique is well endowed with fishery resources due to the oceanographic conditions and the eutrophication of coastal waters from several major river systems.

#### 2.2.1.1 Marine fish species

Marine fish resources include important stocks of shallow-water shrimp predominantly white shrimp (*Penaeus indicus*) and brown shrimp (*Metapenaeus monoceros*), while other species are caught in much lesser quantities (*P. japonicus*, *P. latisulcatus*, and *P. monodon*). A small coastal species: *Acedes. spp*) (so-called "munde" shrimp) is also caught. Deep-water (>200m) shrimp resources are also found, the main species are *Haliporoides triarthrus vniroi* (gamba rosa) and *Aristaeomorpha foliacea* (gamba vermelha), as well as other species such as *Aristeus antennatus*, *Aristaeopsis edwardsiana*, and *Penaeopsis balssi*. There are also commercially important stocks of crayfish (langostino - *Metanephrops mozambicus*, *Nephropsis stewarti*), crab (*Chaceon macphersoni*), and deep-water lobster (*Palinurus delagoa*).

Small pelagic resources include anchovy (*Engraulidae*, *Stylephorus spp*), barracuda (*Sphyraena spp*), driftfish (*Ariomma spp*), jack mackerels (*Alepes spp*, *Carangoides spp*, *Caranx spp*), mackerels (*Rastrelliger spp*, *Scomber spp*), ponyfish (*Leiognatidae*), sardines (*Sardinella spp*, *Dussumieria spp*, *Etrumeus*, *Hilsa keelee*), and scads (*Decapterus spp*, *Trachurus spp*). These small pelagic fish are mainly confined to the shelf area at depths less than 200m.

On the continental shelf, the dominant demersal species are snappers (*Lutjanidae*), goatfish (*Mullidae*), threadfins (*Nemipteridae*), grunts (*Pomadasyidae*), croakers (*Sciaenidae*), and lizard fish (*Synodontidae*). These coastal species are also the dominant species caught by artisanal fisheries such as small pelagics (e.g. *Engraulidae*, *Clupeidae*, *Carangidae*), demersals (*Sciaenidae*, *Mullidae*, *Haemulidae*, *Lethrinidae*, *Lutjanidae*, *Ariidae*), demersal sharks, and occasionally billfish (*Istiophoridae*).

The dominant species observed in deeper waters are smelts (*Argentinidae*), flounders (*Bothidae*), snake mackerel (*Gempylidae*), trumpet fish (*Macrorhamphosidae*), rat tail (*Macrouridae*), crocodile fish (*Peristediidae*), spiny shark (*Squalidae*), lizard fish (*Synodontidae*), and gurnard (*Triglidae*). There is also a wide variety of demersal sharks and rays, but the information concerning species identification is limited. Information on cephalopods is also limited, but there appear to be a wide variety of clams and bivalves as well as the more common families of octopus, cuttlefish and squid are presumed to be common.

Mesopelagic species (*Benthoosema spp*, *Hygophum spp*, *Myctophum spp*, *Symbolophorus spp*, *Daiphys spp*, *Maurollicus spp*) appear also to be abundant in Mozambican waters at depths below 500m. These are currently unexploited resources, but a commercial exploitation would be difficult with current technology.

In terms of the larger pelagic oceanic resources found in the EEZ, the more abundant tuna species are skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), bigeye (*Thunnus obesus*), and albacore tuna (*Thunnus alalunga*). Dominant billfish species appear to be swordfish (*Xiphias gladius*), black marlin (*Makaira indica*), and Indo-Pacific blue marlin (*Makaira mazara*). Other tuna related species that are known to be common are Spanish mackerel (*Scomberomorus commersoni*), kawakawa (*Euthynnus affinis*), bonito (*Sarda orinetalis*), wahoo (*Acanthocybium solandri*), and other seerfish (*S. guttatus*, *S. maculatus*, *S. lineolatus*) as well as other associated species such as rainbow runner and dolphinfish (*Elagatis bipinnulata* and *Coryphaena hippurus*, respectively).

Surface longline fisheries target increasingly specific pelagic shark species such as blue shark (*Prionace glauca*) and shortfin mako (*Isurus oxyrinchus*), which are commercially important species. Other shark species known to be common are thresher shark (*Alopias vulpinus*), and various requiem

sharks (*Carcharinidae*; *C. limbatus*, *C. longimanus*, *C. melanopterus*, *C. albimarginatus*, *C. leucas*, *C. brevipinna*).

#### 2.2.1.2 *Inland fish species*

Inland fish resources are dominated by kapenta in Lake Cahora Bassa. Kapenta is also called the Tanganyika sardine, which is actually two species (*Limnothrissa miodon* and *Stolothrissa tanganyicae*) both of which are small, planktivorous, pelagic, freshwater clupeid originating from Lake Tanganyika. They form the major biomass of pelagic fish, swimming in large schools in the open lake, feeding on copepods and potentially jellyfish. However, there are also a wide variety of demersal fish found in Lake Cahora Bassa and Lake Nyassa, the two major lakes in Mozambique.

#### 2.2.1.3 *Fish stocks*

The Fisheries Master Plan (1995) presents a maximum potential of about 390,000 tonnes. Current estimates of artisanal fisheries production are in the range of 70-120,000 tonnes, based on a nationwide census in 2002 and recent improvements in sampling of artisanal landings and effort. Industrial fisheries production is around 40,000 to 50,000 tonnes, which appears to indicate that there is still considerable room for developing fisheries in Mozambique.

An updated review of estimated potentials is not available. Furthermore, the origin of these estimates is not documented in the Fisheries Master Plan (1995) or in other relevant strategic documents, where the same information is often reiterated. It is therefore not possible to assess their validity. Indications are however that these estimates are based on rough calculations using the few data available, which generally do not allow quantitative estimates of fisheries potential to be made with confidence. It must therefore be concluded that very little is known about the marine fisheries potential of Mozambique, except for the shallow-water shrimp. The situation concerning the freshwater resources is the same or even more uncertain.

## 2.3 FLEET STRUCTURE AND ACTIVITIES

### 2.3.1 *Domestic Fishing Fleet*

Fishing fleets are divided up into three main categories for management purposes and these are:

- Industrial fisheries: constituted by vessels with a total overall length greater than 20 meters with autonomy greater than 15 days at sea. This category is composed of trawlers targeting shrimp in the Sofala Bank, in particular, as well as tuna purse seiners and longliners. In the case of trawlers, engine power cannot exceed 1500 HP or 1100 KW.
- Semi-industrial fisheries: constituted by vessels with a total overall length between 10 and 20 meters with autonomy for at least 2 days or less using ice preservation or 15 to 20 days using onboard freezing capacity. In the case of trawlers, engine power cannot exceed 350 HP or 259 KW. Most of the fleet is composed of trawlers fishing for shrimp in coastal waters as well as handliners fishing for high valued demersal fish.
- Artisanal fisheries: this activity is undertaken locally in fishing communities by families or companies, using traditional fishing gears and may or may not involve a boat. The boats should have a total overall length less than 10 meters with autonomy for at least 24 hours and up to 100 HP or 74 KW in terms of engine power. This category includes also subsistence fisheries, which are occasional and complementary to agricultural activities, using rudimentary fishing gears.

### 2.3.2 *Industrial and semi-industrial fleet*

Trawlers fishing for high-valued shrimp resources dominate the industrial and semi-industrial fisheries. There are a number of joint-venture companies and direct licensing schemes with Japanese, Spanish, Portuguese and South African fishing firms, which account for about 70% of the shrimp fishery in Mozambique. Several experimental surveys for tuna have taken place, but the efforts of developing a national tuna fishery have been largely unsuccessful. Foreign longliners and purse seiners, including vessels in joint ventures, have taken most of the catches in the past and they are expected to continue to dominate in terms of catches.

Table 12 below shows the number of active industrial and semi-industrial vessels in the national fisheries (parenthesis indicates number of freezer semi-industrial vessels operating). There are a further 22 artisanal vessels (inboard engine and closed deck) fishing for shallow-water shrimp in the Sofala Bank (accounted for in 2004 and 2005 by DNAP).

**Table 12: Number of active industrial and semi-industrial vessels in the national**

<b>Fleet</b>	<b>Year</b>	<b>SW shrimp</b>	<b>DW shrimp</b>	<b>Fish trawling</b>	<b>Line fishing</b>	<b>Total</b>
Industrial	2000	58	16	5	4	83
	2001	60	23	3	4	90
	2002	59	17	1	3	80
	2003	61	16		5	82
	2004	61	20		4	85
	2005	62	25		3	90
Semi-industrial	2000	69 (27)			19	88
	2001	76 (20)			10	86
	2002	79 (20)			17	96
	2003	79 (16)			22	101
	2004	79 (16)			26	105
	2005	77 (14)			25	102

Source: DNAP; (SW – shallow-water; DW – deep-water)

The national industrial fleet is based in only three ports that can offer the basic services of handling, supply of fuel and water and cold storage: Quelimane, Beira and Maputo. The fishing products are mainly exported after being processed and packaged at sea. No products originating in industrial vessels are processed in land-based facilities.

About 80 freezer vessels (also including a number of semi-industrial vessels) are approved for export to the European Union market. The regulations involve both an administrative and technical procedure before a health authorisation is issued for the vessel.

Two thirds of the semi-industrial fleet is based in Beira (26%) and Maputo (40%). The other fishing ports are Quelimane (11%), Inhambane (5%) and Angoche and Vilanculos with one vessel each. Lake Cahora Bassa accounts for 16% of the semi industrial fleet.

**Table 13: Distribution of the national fleet according to port, including the size of the fleet (in number of vessels) and mean GRT.**

	2000		2001		2002		2003		2004	
	No.	GRT	No.	GRT	No.	GRT	No.	GRT	No.	GRT
Nacala	0		0		0		1		0	
Angoche	1	116	8	16	8	16	8	16	8	16
Quelimane	41	194	41	217	34	202	32	198	28	220
Beira	91	187	81	162	64	169	65	206	68	169
Inhambane	8	35	4	30	6	24	6	26	4	28
Maputo	52	125	49	144	61	133	61	153	62	162
Total	244		226		214		194		229	

Source: Tenreiro de Almeida 2005

### 2.3.3 Artisanal fleet

Artisanal fishing takes place along the whole coast of Mozambique, although it is particularly important in the Sofala Bank area, employing relatively basic equipment and landings occurring on any accessible beach. An estimated 3% of these boats are motorised and 65% are canoes of various types. Thus, the capacity to effectively target tuna and large pelagic species appears to be very low in the Sofala Bank area. A substantial number of handline gears are licensed in the northern Cabo Delgado and Nampula provinces and some tuna-like species constitute an important part of the catches (ex. seerfish and small tuna species such as kawakawa, etc.)

**Table 14: Summary of the National Census of Artisanal Fisheries in 2002**

Province	Fishers	Boats	Landing Sites	Gears	Main Gear types		
					Beach seine	Handline	Drift gillnet
					%		
Cabo Delgado	15,875	4,124	141	4,359	11	50	12
Nampula	22,940	3,810	158	3,912	34	30	17
Zambézia	10,378	2,909	114	3,225	29	29	23
Sofala	9,341	2,337	92	2,485	35	18	30
Inhambane	7,838	1,376	106	1,707	28	40	8
Gaza	769	177	13	248	27	19	41
Maputo	2,218	532	34	560	36	21	37
<b>Total</b>	<b>69,359</b>	<b>15,265</b>	<b>658</b>	<b>16,496</b>			

Source: IDPPE

### 2.3.4 Foreign fishing fleet

#### 2.3.4.1 Tuna purse seiners

Foreign purse seiners fish in Mozambican waters within the framework of a regional strategy to follow schools of tuna. They take most of the catches further offshore and rarely using land-based facilities except in case of emergencies. Occasionally, a national company may charter a foreign vessel to undertake fishing for tuna or large pelagics, however they must operate under foreign fishing licences. Table 15 shows that the total number of purse seiners has increased in recent years, showing increasing interest in fishing in the area. The vessels involved are flagged from the EU, Taiwan, Panama, Antilles and Seychellois, as shown in Table 16.

**Table 15: Number of issued tuna fishing licenses**

	Non-EU/MOZ FA		EU/MOZ FA		Total
Year	Purse seiners	Longliners	Purse seiners	Longliners	
1997	44	37			81
1998	47	60			107
1999	55	37			92
2000	30	42			72
2001	28	52			80
2002	26	45			71
2003	34	38			72
2004	9	75	35	10	129
2005	9	58	35	13	115
2006			34	12	

Source: DNAP & EC

Note: The Fisheries Agreement (FA) with the EU agreement entered into force on the 1<sup>st</sup> of January, 2004.

Prior to the 2004-2006 EU Mozambique Fisheries Agreement, EU tuna purse seiners would draw licences directly from the MoF. Since 2004 an average of 35 European purse seiners annually have drawn licences under the Agreement to fish in the Mozambican EEZ.

**Table 16: Vessel characteristics in terms of GRT or HP in the national and foreign fleets**

Gear / Fishery	Flag	Vessels	Mean	Mean
			GRT	HP
National Fisheries				
Industrial - SW shrimp		69	233	
Industrial - DW shrimp		24	395	
Industrial – Fish		4	98	
Semi - SW shrimp (Angoche)		8	16	
Semi - SW shrimp (South Sofala)		25	39	
Semi - SW shrimp (Maputo/Limpopo)		28	17	
Semi – Fish		12	32	
Foreign Vessels				
Purse seine	Antilles	1	2,058	4,400
	Belize	2	1,528	4,200
	France	18	1,222	
	Italy	1	1,620	
	Panama	2	1,749	4,375
	Seychelles	9	1,818	5,158
	Spain	22	1,670	4,627
	Taiwan	5	305	675
Longline	Honduras	10	495	1,000
	Japan	90	376	1,025
	Panama	1	167	450
	S. Africa	1	302	1,300
	Spain	3	319	722
	Taiwan	41	464	1,119

Source: DNAP (SW – shallow-water; DW – deep-water)

Note: Fisheries (industrial and semi-industrial) and major foreign flags, based on the registry of vessels operating in Mozambique over the period 1997-2005.

Because of the highly migratory characteristics of tuna, the purse seiners tend to exploit a large area in the Western Indian Ocean, bordered by the parallels 10°N and 20°S, the East African Coast and the meridian 80°E. This fishery is characterised by two distinct activities: setting on schools associated to floating objects (FADs), and setting on free-swimming schools. The floating/drifted objects, either natural or artificial (specially designed rafts), which provide a greater success rate for the sets, are now extensively used (60 to 80 % of total catch).



The geographic distribution of these two types of fishing is mainly related to the surface current pattern. The objects tend to concentrate in the gyres (Somalia during the 3rd quarter, Northern Mozambique Channel) and, to a lesser extent, in the Equatorial Counter Current (ECC), a seasonal zonal current (November to March) flowing eastwards. Skipjack, mixed with small sized yellowfin and bigeye (less than 10 kg) are dominant (in numbers) on objects. In free schools, the bulk of the catch is made up of large yellowfin (FL>100 cm).

The three main fishing grounds exhibit a well-marked seasonal pattern. The Somali basin is exploited from mid-July to mid-November. The seiners fish mainly on floating objects and skipjack is the dominant species. The Mozambique Channel is another area with significant seasonal (March-June) catches on objects and a corresponding dominance of skipjack. On the other hand, the central area (ECC) is dominated by yellowfin caught in free-swimming schools. However, activity, using floating objects, in this area is more or less continuous throughout the year.

It is noteworthy that there appears to be a general increase in the number of tuna fishing licenses issued by the DNAP in recent years, 2004-2005 (Table 16). This increasing interest in fishing in Mozambican waters is more clear when considering the longline fishery, where the number of total longline licenses more than doubled from 38 in 2003 to 85 in 2004. In 2005 total number of licensed vessels decreased somewhat to 71.

#### *2.3.4.2 Surface Longliner Fleet*

The southern Mozambique Channel is an important fishing ground for both surface longliners, targeting swordfish and sharks, and deep longliners, targeting bigeye, yellowfin and albacore tuna. During the period 2004/2005, there were an estimated 85 surface longline vessels with licenses to fish in Mozambican waters, mostly of Asian origin (China, Japan, Korea and Taiwan) but some of EU origin. Typically, EU longline vessels target swordfish and to a lesser extent shark, whereas there are Asian vessels that operate both types of longline fishing, surface and deep longlining.

The foreign longline fleet fishing in Mozambican waters has generally been dominated by Japanese vessels. In 2004, out of a total of 75 licensed vessels, 60 were Japanese vessels, which target deep-swimming tuna primarily (see Table 16). Other Asian flag vessels make up for the rest such as China, Korea, Philippines, and Honduras. In some cases, these appear to be Taiwanese vessels under flags of convenience (probably the case for the Honduras and Philippines flag). The Taiwanese SLL fleet is one of the prominent fleets in the southwest Indian Ocean. However, the number of vessels from the major Taiwanese fleet actually taking up a license to fish in Mozambican waters is limited. There were an average of 17 Taiwanese longliners licensed to fish in the period 1999-2001, but this number had fallen to 2 in 2004.

In relation to European longliners, an average of 12 Spanish and Portuguese vessels have drawn licences to fish in Mozambique since the start of the Agreement in 2004, but declaring zero catches in the Mozambican EEZ. Spanish longliners were nevertheless present even before the Agreement, acquiring licenses directly from the Mozambican authorities. For example, an average of 8 Spanish longliners were licensed to fish in the period 1999-2001, although these vessels appear not to have been interested in renewing licenses in subsequent years, 2002 and 2003.

There also appears to be a substantial catch of swordfish and billfish by licensed vessels operating under flags of convenience in the Mozambique EEZ, and to a lesser extent, by South African vessels. No data on catches is available.

#### *2.3.5 Recreational fisheries*

A small but rapidly increasing activity is sports and recreational fishing. In 2003, 278 fishing licenses were issued to tourist centres distributed along the coast, 158 of which were in the Maputo area. Catch data is not available, but it is not expected to be high at present, although it may well develop into a major activity, considering the development of tourism in Mozambique. This fishery typically targets a combination of species including large pelagics such as billfish and tuna as well as large demersals.

The recreational subsector in Mozambique consists of a small number of marine sports clubs based in Maputo, which organise game fishing tournaments in the main tourism areas in the southern part of the country. The main ones are Ponta de Ouro near the border with South Africa; Maputo Bay; Inhaca Island; Bilene; Xai-Xai; Ponta Závora; Tofo; Inhassoro; and Bazaruto Island. Foreign Clubs from Zimbabwe and South Africa also promote recreational fishing events in Mozambique in collaboration with local clubs that host such tournaments. A considerable number of recreational anglers from abroad participate.

## 2.4 CATCHES AND LANDINGS

### 2.4.1.1 Industrial and semi-industrial fishery

Industrial and semi-industrial vessels are required to declare catch and effort through the submission of logbook reports every 10 days. There are some problems in covering the semi-industrial fleet using ice for conservation, as the captains have problems in filling out the logbooks (e.g. illiterate, limited written and arithmetic skills). Overall coverage is estimated to be around 80 % of fishing activity. It is important to point out that official fisheries statistics have included only these reported catches, thus not including any estimate for artisanal fisheries. In recent years, the fishing activity of 25 larger artisanal vessels (closed deck and inboard engines) is also being included.

Statistics are available for broad species groups such as marine fish, shallow-water shrimp, deep-water shrimp, lobster, langostino, tuna, shark, etc. (Table 17). Note that there has been an increase in catches of shallow-water shrimp from around 9,000 to 13,000 tonnes in recent years. However, this is due to a better accounting of artisanal catches, including the so-called “munde” shrimp (small coastal species: *Acedes. spp*). Catches of commercially important shrimp such as white and brown shrimp have in fact declined (see section on status of shallow-water shrimp).

**Table 17: Catches by fishery and category, not including the foreign tuna fishery.**

		2000	2001	2002	2003	2004	2005
		tonnes					
Trawling	SW shrimp	9,429	9,401	9,472	13,550	12,403	13,005
	Bycatch	1,040	987	1,439	1,402	1,154	1,631
Deep trawling	DW shrimp	1,766	1,737	1,437	1,413	908	1,774
	DW lobster	0	0	5	1	1	1
	Langostino	105	69	75	125	131	149
	Crabs	76	47	31	82	183	158
	Cephalopods	100	76	57	128	34	165
	Fish	156	65	59	205	199	197
Linefishing	Fish	727	520	407	554	472	597
	Kapenta	11,813	5,284	12,137	10,948	18,750	12,657
Total		25,212	18,186	25,119	28,408	34,235	30,334

Source: DNAP; (SW – shallow-water; DW – deep-water)

Bycatches in the industrial and semi-industrial trawl fisheries are high as the targeted shrimp constitute only between 1 and 20% of haul catches as determined by research surveys<sup>10</sup>. Total bycatch

<sup>10</sup> e.g. Brinca *et al.* 1983

from the shallow-water shrimp fishery is estimated at about 40,000 t<sup>11</sup>. Most of this bycatch is constituted by demersal fish species (49.6 %), small pelagic species (48.6 %) and demersal sharks/rays (1.8 %). Artisanal fishermen, who collect directly from the trawlers, are using some of this by-catch. IDPPE estimates that about 8,000t of the industrial bycatch are being used artisanal fishermen.

#### 2.4.1.2 Artisanal fishery

Recent efforts involving the Fisheries Research Institute (IIP) and Institute for Small Scale Fisheries Development (IDPPE) have resulted in improved estimates of artisanal fisheries production. There does not appear to be a consensus on the size of this production, but this appears to be in the range of 70-120,000 tonnes (Table 18 below). Taking into account possible under reporting the catch from this sector may be as high as 100,000 tonnes/annum.

**Table 18: Total estimated artisanal catches in provinces covered by the sampling programme**

Category	Maputo	Inhambane	Sofala	Zambézia	Nampula	Total
Shrimp	83	150	96	1,949	3,557	5,835
Fish	4,040	2,871	2,607	17,781	30,460	57,759
Cephalopods	1	2	1	18	367	389
Crabs	2	82	7	87	178	356
Sharks	0	0	57	324	48	429
Others	0	40	4	2,238	24	2,306
Total	4,126	3,145	2,772	22,397	34,634	67,074

Source: IIP

Note that the provinces Gaza and Cabo Delgado are not covered.

Several projects are underway in provinces such as Nampula, Zambézia, Sofala, Inhambane and Maputo in order to collect information on the artisanal fisheries. The information available on the artisanal fisheries gives an idea on the species composition of the catches, a large proportion (73 %) of the catches are taken by beach seines. The vast majority of the fish species caught in the artisanal fisheries are constituted by small pelagics (e.g. *Engraulidae*, *Clupeidae*, *Carangidae*), demersals (*Sciaenidae*, *Mullidae*, *Haemulidae*, *Lethrinidae*, *Lutjanidae*, *Ariidae*), demersal sharks, and occasionally billfish (*Istiophoridae*).

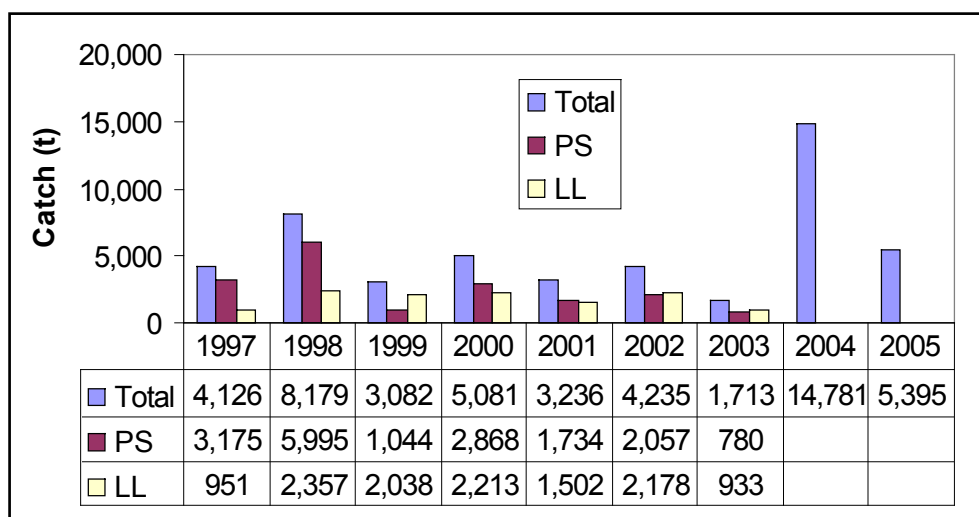
There appear to be practically no catches of larger pelagic species such as tuna in the artisanal fisheries, bearing in mind the prevalence of beach seines. The exceptions to this are the catches of seerfish (*Scomberomorus commerson*), in particular, which can be considerable in the handline fishery (up to 30% of catches)<sup>12</sup>. Handline fisheries tend to gain more importance in areas with narrow shelves and deeper waters such as in the northern and southern provinces, where small tuna may be important as a seasonal fishery. In addition around Angoche which is considered part of the Sofala Bank, generates some catches of seerfish and Indian mackerel (*Rastrelliger kanagurta*). Kawakawa (*Euthynnus affinis*) and seerfish are also taken in the Maputo Bay area, more specifically around the island of Inhaca. Thus, it would appear that catches of tuna and tuna-like species, the high valued seerfish in particular, can be important.

<sup>11</sup> Fenessy et al. 2004

<sup>12</sup> Baloi et al. 2002-a, 2002-b

### 2.4.1.3 Tuna purse seine fishery

The reported catches by foreign vessels have been an average of 4-5,000 tonnes in recent years (Figure 5). The high catches of almost 15,000 tonnes in 2004 are notable, of which about 12,000 tonnes were taken by EU vessels under the Agreement and about 1,680 tonnes by purse seiners under the Seychelles flag. EU vessels have not yet reported their catches in 2005, so the given figure of 5,400 tonnes concerns vessels not included in the Agreement.

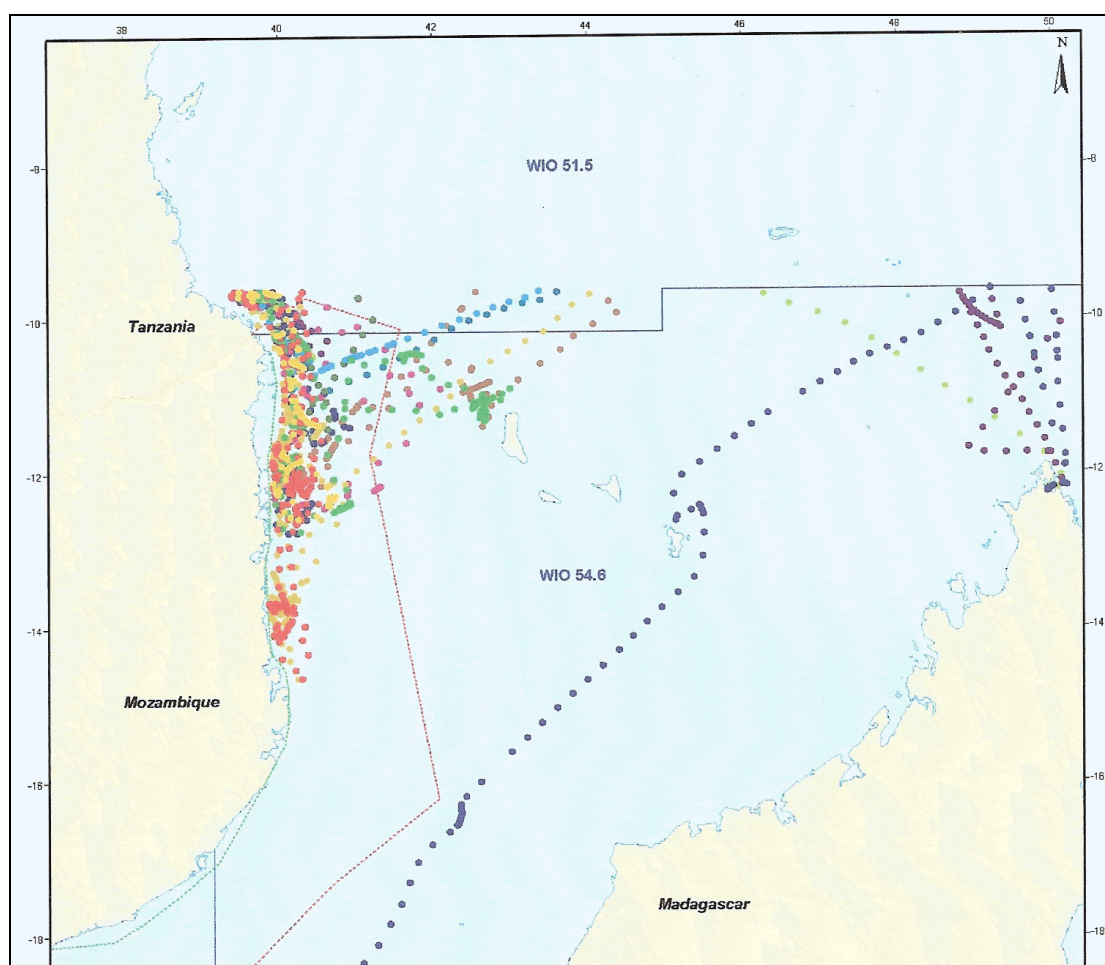


Source: DNAP

Note: PS – purse seine; LL – longline; fleet break-up not available in recent years

**Figure 5: Declared catches of tuna and tuna-like in the Mozambican EEZ**

The high catches in 2004 could be interpreted as an indication that non-reporting of catches was a serious problem in previous years. However, this appears to be more the result of exceptionally high catches of yellowfin tuna, in particular, in the waters off Tanzania and Mozambique (see section on the status of yellowfin tuna). Available VMS data supports this, showing strong activity in this area (Figure 6).



Source: EC

**Figure 6: Purse seine activity off the coasts of Tanzania and Mozambique from the VMS of Community vessels.**

Data on the species breakdown of catches from the tuna fisheries in Mozambique is fragmentary and limited. Using available data, it can be seen that skipjack, and to a lesser extent, yellowfin tuna, dominate the catches of the purse seine fishery, which is characterised by fishing on FADs in the area. Catches of the longline fishery are more diverse, but yellowfin tuna dominates and there are substantial catches of swordfish as well as the “other” category, presumably sharks and other species such as wahoo, rainbow runner and dolphinfish (*Acanthocybium solandri*, *Elagatis bipinnulata*, and *Coryphaena hippurus*, respectively). However, it should be noted that different surface longline fleet segments target different species. EU Longliners fishing under the Agreement, target mainly swordfish and sharks, whereas Asian longliners target tunas, mainly larger yellowfin, albacore and bigeye.

Table 19: Species composition in the tuna fisheries in Mozambique

Group	Species	Purse seine			Longline				
		1999	2000	2001	1999	2000	2001	2002	2003
		%							
Tuna	Albacore			4	4	4	7	9	6
	Bigeye				2	2	3	7	4
	Skipjack	93	87	61	1				
	Yellowfin	7	12	34	70	63	82	70	82
	S. Bluefin			1			3		
Billfish	Swordfish				6	13	5	3	2
	Billfish		1		3	6			
	Black Marlin								1
	Sailfish					1			1
Other	Other				14	11		12	3

Source: Source: DNAP from Stobberup et al. 2004

In relation to vessels fishing under the Agreement, only Spanish vessels gave species breakdown of purse seine catches. Out of a total catch of 2,414 tonnes in 2004, this was comprised of 72 % yellowfin and 27 % skipjack. This does not conform to the general pattern observed above, where skipjack tend to dominate, but it supports the general finding that this was an exceptional year with high catches of yellowfin from free swimming schools.

#### 2.4.1.4 Surface longline fishery

Catches by surface longline vessels (shown in Figure 5) have been in the region 1,000 to 2,000 tonnes/annum. Overall 70 to 80% of the catch is yellowfin tuna, caught by SE Asian vessels targeting large tunas for the Asian market. EU longline vessels have declared zero catches in the Mozambican EEZ in 2004, but the stakeholders involved indicate that swordfish (49 %) and sharks (50 %) dominated their catches in the southwest Indian Ocean. Each longline vessels catches about 500 tonnes per year, which gives an estimate of around 6,000 tonnes taken in the southern Mozambique Channel, assuming an average of 12 EU longline vessels. As these vessels use surface longline, species composition differs from the general pattern given in the table above.

## 2.5 STATUS OF FISH STOCKS

### 2.5.1 Management recommendations

#### 2.5.1.1 Resource Management Approaches

For management purposes, marine resources are divided up into the following categories; shallow-water shrimp, deep-water shrimp, deep-water lobster, crayfish, deep-water crab, fish caught by line, fish caught by trawl, tuna and tuna-like species. A number of measures are used in managing these resources, including total allowable catches (TAC), catch quotas, mesh size regulations, closed fishing seasons and areas as well as limited entry to the fisheries, depending on the resource. The following table shows the management measures applied by the Fisheries Administration (DNAP) in 2005.

**Table 20: Type of management measures applied in 2005.**

Fishery	<i>Minimum size</i>	<i>Restricted Access</i>	<i>Closed Fishery</i>	<i>Seasonal Closures</i>	<i>TAC &amp; Catch Quotas</i>
Shrimp, shallow-water		✓		✓	✓
Shrimp, deep-water		✓			✓
Lobster, deep-water			✓		
Lobster, shallow-water	✓				
Fish (linefishing)		✓			✓
Fish (trawling)	✓	✓			✓
Holothurians	✓				
Mangrove crab	✓				
Kapenta (lake fisheries)		✓			

Source: DNAP

A large proportion of the industrial and semi-industrial are trawlers that operate in the shrimp fishery, shallow-water species in particular. In relation to coastal resources, formal stock assessments exist only for shallow-water shrimp, while the status of other resources are based on indicators such as catch and catch per unit of effort (CPUE) over time. In the case of tuna resources, stock assessments are carried out for major tuna species in the context of the Indian Ocean Tuna Commission, although there have been difficulties due to the lack of sufficient and reliable data. Assessment results for tuna are therefore applicable to the Indian Ocean as a whole or for a particular sub-area, thus not specific for Mozambican waters.

The Fisheries Research Institute (IIP) estimates that the relative status of various resources is as follows:

- Highly exploited resources include Penaeid shrimps (shallow-water shrimp, mainly *Penaeus indicus* - Indian white prawn and *Metapenaeus monoceros* - brown shrimp), shrimp munde (*Acedes spp.*), deep-water lobster, sea cucumber and demersal fish at Cahora Bassa reservoir.
- Moderately exploited resources include Penaeid shrimps in zones only accessible to the artisanal fishery, deep-water shrimp (mainly *Haliporoides triarthrus vnirio* and *Aristaeomorfa foliacea*), deep-water crayfish, deep-water crab and large demersals except on the São Lazaro Bank.
- Resources with low exploitation include rock lobster, Mangrove crab, large demersals on Sao Lazaro Bank, large pelagics, sharks, small demersals, small pelagics, deep-water fish, squid, cephalopods, algae, bivalves, kapenta (Cahora Bassa), demersal fish (Cahora Bassa & Lake Nyassa).
- It is stated that some resources are considered unexploited but no information is available on these.

Migratory offshore fishery resources exploited by purse seine and surface long line vessels are subject to IOTC management recommendations. These issues and the associated implications for fishing opportunities are considered in more detail in subsequent sections.

#### 2.5.1.2 Shallow-water Shrimp

The Sofala Bank shallow-water shrimp fishery is by far the most important fishery in terms of export and influx of foreign currency. The fishery has been developed over a period of 25 years. The profitability in the fishery led to a steep increase in effort and a corresponding decline in catches until

a historical low level was reached in 1990 with a catch of about 5,500 tonnes. A closed season regulation (first closing January, later January and February) was introduced in the early nineties and the catches started increasing, although the increase in effort now increases at a higher rate.

**Table 21: The shallow-water shrimp fishery fleet 2005.**

Area	Sofala Bank				Maputo Bay	Limpopo		Total
Fleet	Industrial	Semi-Freezer	Semi-Ice	Artisanal	Semi-Ice	Semi-Ice	Artisanal	
TAC (t)								8,000
Closed season	15 Nov. – 1 Mar.		1 Dec. - 15 Mar.		1 Jan. - 1 Mar.			
Quota (t)	8,410	875						9,285
Vessels	61	14	32	22	22	5		156
Catch (t)	6,901	838	413	7	276	79	4,485	12,999
Effort (days)	12,416	2,444	2,192	108	5,245	735		23,140
CPUE (kg/day)	556	343	188	65	53	107		

Source: DNAP (SW: shallow-water; DW: deep-water; semi-ice: semi-industrial vessels using ice for conservation)

**Table 22: The shallow-water shrimp fishery catches 2000 - 2005.**

Year			2000	2001	2002	2003	2004	2005
SW shrimp	Sofala Bank	Industrial	7,436	7,597	7,285	6,255	6,552	6,901
		Semi-industrial						
		Freezer	1,296	1,157	1,117	855	904	838
		Ice	182	213	235	363	347	413
	Maputo Bay	Semi-Ice	235	117	185	165	226	276
	Limpopo	Semi-Ice			13	39	66	79
	Artisanal	Larger vessels					7	7
		Other	280	317	637	5,873	4,301	4,485
	Total		9,429	9,401	9,472	13,550	12,403	12,999
		Industrial	560	633	840	798	549	1,081
Bycatch		Semi-industrial	480	354	599	604	605	550

Source: DNAP (SW: shallow-water; DW: deep-water; semi-ice: semi-industrial vessels using ice for conservation)

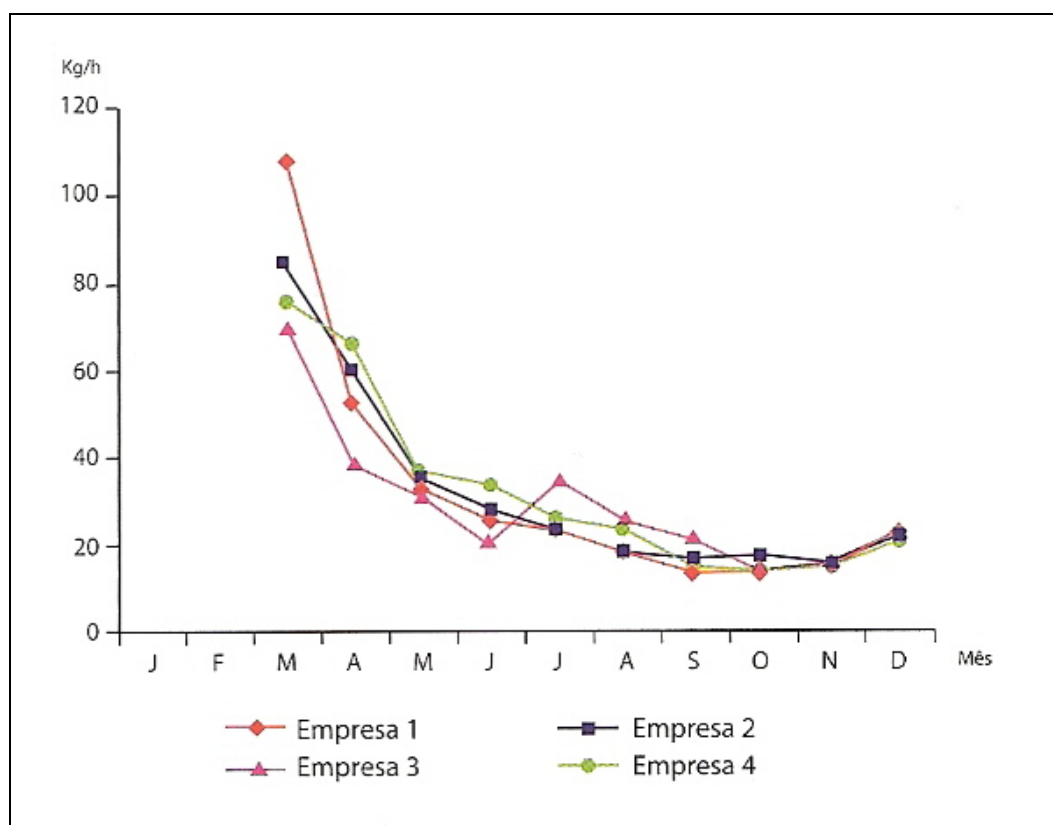
Catches in the industrial and semi-industrial fishery appear to show a tendency for lower catches in recent years (Table 22). The strong increase in artisanal catches since 2003 is the result of a better coverage of actual artisanal fishing activity and should not be used as an indication of improving



stock conditions. Artisanal catches of shrimp constitute a minor proportion of total artisanal catches (generally less than 5 %), but the large size of the fishery means that the amount is important.

White shrimp (*Penaeus indicus*) and brown shrimp (*Metapenaeus monoceros*) dominate the catches with around 60% and 30%, respectively. Catches of the valuable tiger prawn (*Penaeus monodon*) were 349 tonnes in 2004 and have been stable around this level since 1999. All the species involved are short-lived, typically a one-year lifespan, and environmental effects are expected to play an important role in their population dynamics. The amount of river run-off from the important rivers in the area is correlated with total catch, where high levels of river run-off are associated with improved recruitment conditions (e.g. 2001).

The main contribution of the closed season regulation is a more profitable fishery during the beginning of the fishing season, which has resulted in increasing pressure towards higher fishing effort. However, as CPUE decreases steeply during the season (Figure 7), some of the fleet shifts towards targeting deep-water shrimp during part of the year.



Source: IIP

**Figure 7: Monthly catch per unit of effort (CPUE; kg/h) of shallow-water shrimp, provided by 4 fishing companies.**

The available data for assessment purposes can be considered satisfactory in terms of quantity and quality. These are a combination of logbook data (80% coverage of the industrial and semi-industrial fleet), biological sampling at landing sites, and annual surveys carried out in the closed season to assess recruitment and abundance of shallow-water shrimp.

The shallow water shrimp resources on the Sofala bank are assessed by IIP on a regular annual basis, the latest undertaken in 2005<sup>13</sup>. These assessments are generally of high quality, using external technical assistance. In 2005, stock assessment was carried out with the “Gadget” model, which is a complex age-and-length structured model. The model considers biological processes such as mortality and growth in detail, modelling the two main species (white and brown shrimp) separately with different growth patterns for males and females, as well as technical interactions such as fishing selectivity. It is nevertheless puzzling that survey results are not used to assess relative recruitment or abundance in the gadget model, but instead to provide length distributions only. The reason given is that survey results have been found to be unreliable for predicting stock levels, but this issue should be explained in more detail and be the subject of directed research.

Based on the above, the current recommendation for management is that effort should be reduced by 40% in relation to 2004. This is expected to bring about higher catch rates and a higher mean size of shrimp in the catches, thus increasing the profitability of the fishery. It is also considered safer with respect to sustaining the stocks, especially in years of poor recruitment, as the current level of overcapacity increases the danger of overexploitation.

The established TACs (total allowable catches) have not been reached for many years. If a company reaches their allocated quotas, they are therefore generally provided with additional quota. This suggests that effort control in combination with a closed season, rather than quota control, would be the most effective management system for this fishery. An extension of the closed season to include March, or to maintain near-shore areas for a longer period, would have some negative effects on total catches, but be more sustainable in the long run.

#### 2.5.1.3 Deep-water species (*shrimp or gamba, langostino, lobster & crab*)

The deep-water shrimp fishery commenced in 1968 and is the second most important in Mozambique after the shallow-water shrimp fishery. The fishery is managed by setting a TAC and licensing a number of vessels. Catches were around 2,500-3,000 tonnes in the period 1985 to 1990, when effort was higher and the vessels were characterised by being larger. The TAC in 2005 was set at 3,100 tonnes. However, the TAC has not been reached in recent years and the licensed vessels fish for deep-water shrimp only during some months, if at all. The catch of deep-water shrimp has been in the range 1,500-2,000 tonnes since 1995 with about 20-23 vessels licensed to fish for deep-water shrimp. In effective terms, the number of vessels actually fishing for deep-water shrimp are around 20, but these do so only during a few months, mostly during the closed season for shallow-water shrimp.

The predominant species are *Haliporoides triarthrus vniroi* (gamba rosa) and *Aristaeomorpha foliacea* (gamba vermelha), which constitute about 70% and 20%, respectively, of total deep-water catches<sup>14</sup>. Other species such as crayfish (*Metanephrops mozambicus*, *Nephropsis stewarti*), crab (*Chaceon macphersoni*), deep-water lobster (*Palinurus delagoa*), and various fish species make up the rest of the catches. Note however that these catches do not account for discards for which there is no available information, although discarding is presumed to be much lower than in the shallow-water shrimp fishery.

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<sup>13</sup> Palha de Sousa and Howell, 2005

<sup>14</sup> Caputi *et al.*, 2002

**Table 23: Deep-water shrimp fishery, 2005.**

Deep-water shrimp (Gamba): 2005						
	DW shrimp	DW lobster	Langostino	Crab	Cephalopod	Fish
TAC* (t)	3,100	0	500	500		
Quota (t)	2,071		298	248	183	323
Vessels	25					
Catch (t)	1,774	1	149	158	165	197
Effort (days)	3,620	158	2,551	2,658	3,563	152
CPUE (kg/day)	490	6	58	59	46	1,296
Deep-water shrimp (Gamba): 2000 – 2005						
	2000	2001	2002	2003	2004	2005
Catch (t)	1,766	1,737	1,437	1,413	908	1,774
Effort (days)	2,941	3,026	2,643	2,931	2,083	3,620
CPUE (kg/day)	600	574	544	482	436	490
DW lobster			5	0.6	1.2	1.0
Langostino	105	69	75	125	131	149
Crabs	76	47	31	82	183	158
Cephalopods	100	76	57	128	34	165
Fish	156	65	59	205	199	197

\* Total Allowable Catch

Source: DNAP

Catches and CPUE have been relatively stable in recent years. Also important is the fact that CPUE is stable during most of the year, as these are longer lived species and their abundance does not fluctuate seasonally as strongly as in the case of shallow-water shrimp. The lack of interest in the fishery is more related to market conditions for the product and, in the case of the national fleet, the limited number of vessels that have the capacity to trawl at such depths. Although there is some evidence of declining interest in recent years, gamba catches increased to about 1770 tonne in 2005.

Deep-water shrimps are not subject to a formal stock assessment, so the establishment of TACs and allocation of fishing licenses is based primarily on the history of the fishery in terms of historical catches, CPUE, and number of vessels.

Other deep-water resources such as langostino, deep-water lobster and crab are taken as bycatch. No formal assessments are undertaken and management measures such as catch quotas are established likewise on historical trends. The deep-water lobster has been overexploited and has been a closed fishery since 2000. Catches of deep-water lobster are allowed only as bycatch in the deep-water shrimp fishery, but it is highly unlikely that such measures (or lack of) will bring about a recovery, as most of the catches have always been as bycatch.

#### 2.5.1.4 Tuna and Tuna-like Species

It is important to point out that Mozambique is not a member of the Indian Ocean Tuna Commission (IOTC) and its participation in IOTC activities has been almost nil, although this may change in the near future<sup>15</sup>. Mozambique is therefore not bound by the management recommendations given by the IOTC.

In Mozambique, these resources are termed tuna without further distinction and the fishery is almost completely dominated by foreign vessels that acquire a fishing license to operate with few practical limitations. Drift gillnets are prohibited in these fisheries and catches of turtles, whales and dolphins are not allowed. Catch quotas for each vessel are generally established based on records of average catch by vessel, but this is considered more an indication on which to base fees and not a catch limit. Also, the Mozambican authorities have had almost no control whatsoever in this fishery, because these vessels do not usually use any land-based facilities in Mozambique and because of limited MCS capacity in Mozambique. The EU/MOZ Fisheries Agreement has therefore brought about considerable change to this situation, by bringing the exploitation of these EEZ resources within the frame of the IOTC management recommendations, and ensuring improvements in catch reporting.

A brief review of the main Indian Ocean tuna stocks (see table below) is provided in this section, including albacore tuna and swordfish, which are of importance to the fisheries in the southwest Indian Ocean. Southern bluefin tuna is included in order to give a complete overview, although catches are negligible in the southwest Indian Ocean.

**Table 24: Review of status of Indian Ocean tuna and tuna-like stocks, including species-specific management measures**

	Current 2004 Yield in t (5-year mean)	Relative Biomass ( $B_{2000}/B_{MSY}$ )	Relative Fishing Mortality ( $F_{2000}/F_{MSY}$ )	Estimated MSY(t)	Management Measures
Yellowfin ( <i>Thunnus albacares</i> )	495,000 (343,400)	Not known	Not known	Not known	None
Bigeye ( <i>Thunnus obesus</i> )	106,000 (118,800)	1.31	1.00	96,000	To be defined <sup>16</sup>
Skipjack ( <i>Katsuwonus pelamis</i> )	529,000 (528,000)	Not known	Not known	Not known	None
Albacore ( <i>Thunnus alalunga</i> )	20,000 (30,600)	Not known	Not known	Not known	None
Swordfish ( <i>Xiphias gladius</i> )	31,000 (31,400)	Not known	Not known	Not known	None

Source: IOTC; (B – biomass; F – fishing mortality; MSY – maximum sustainable yield)

As shown, there are no species-specific management measures currently in place for the major species in the Indian Ocean. However, various recommendations are given by the IOTC, which are presented in subsequent sections. The Scientific, Technical, and Economic Committee for Fisheries (STECF) of the European Commission has also been called upon to comment and review the assessments and

<sup>15</sup> There is a possibility collaboration with the IOTC as non-contracting cooperating party

<sup>16</sup> Implementation of measures is expected in May 2006 in connection with the next session of the IOTC, scheduled for May 2006 (see section on bigeye tuna).

recommendations given. STECF is in general agreement with these various recommendations and has placed emphasis on the need to improve the quality of data available, particularly concerning the fisheries of coastal states, and the need for assessments or assessment updates for species such as albacore tuna, swordfish, and seerfish.

#### 2.5.1.5 Yellowfin tuna (*Thunnus albacares*)

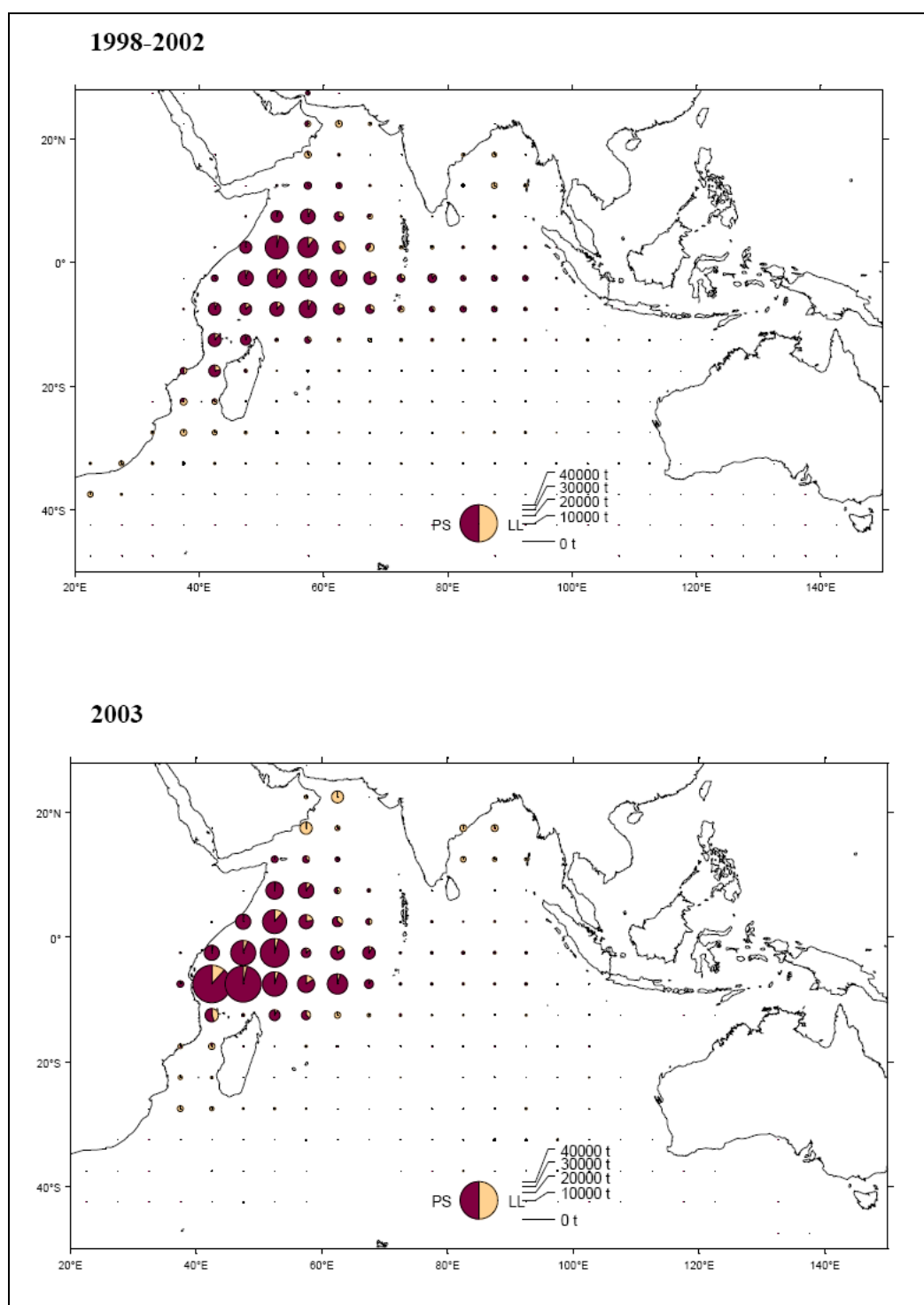
##### Catches

In 2002, total catches of yellowfin in the Indian Ocean (including all fisheries) amounted to 312,000 tonnes. The contribution of purse seiners was 148,000 tonnes and that of long liners 86,000 tonnes. In 2003 and 2004, significant catches of large yellowfin were made, on free schools, by purse seiners in the Western Indian Ocean taking the total catch to approximately 420,000 tonnes (estimate). These catches, 50% higher than those for previous years, are currently unexplained, with only a certain increase in biomass being excluded. If we take the hypothesis that these exceptional catches were associated with recruitment that was itself exceptional, then the catches recorded in 2003 and 2004 do not correspond to an increase in stock productivity. On the other hand, the hypothesis according to which there may have been an increase in catchability in 2003 and 2004 may have serious consequences if it proves to be accurate. In fact, this would mean much higher fishing mortality, which would definitely not be sustainable. In addition, this would result in a rapid decline of the adult biomass of yellowfin and a serious overexploitation of stock, if we relate this to the state of the stock evaluated in 2002. If this is the case, management measures must be taken immediately in order to reduce fishing mortality.

As shown in the following Figure 8, these exceptionally large catches of yellowfin were taken off the coasts of Tanzania and Mozambique. Data concerning 2005 is not yet available, but this situation appears to have reverted back to the typical fishing pattern, where the tuna fishery in the northern Mozambique Channel is characterised by FAD fishing with skipjack dominating the catches<sup>17</sup>. Thus, the relatively large purse seine catches of about 12,000 tonnes in 2004 is expected to decrease in 2005 for the European fleet.

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<sup>17</sup> Miguel Herrera (pers. comm.), Data Manager, IOTC



Source: IOTC

Note : PS – purse seine; LL – longline

**Figure 8: Annual catches for two periods, 1998-2002 & 2003, of yellowfin tuna in the Indian Ocean**

Considering all the stock indicators and assessments, as well as the recent trends in effort and total catches of yellowfin, the Scientific Committee of the IOTC considered that:

- 1) Fishing mortality rates between 1999 and 2002 were probably slightly below or around  $F_{MSY}$ , and total catches during that period, at an average level of 347,000 t, were probably close to,

or possibly above MSY. Total catches in 2003 and 2004 were substantially above MSY; see below for interpretation of the possible reasons for and possible effects of these catches. In these circumstances, any further increase in both effective fishing effort and catch above average levels in 1999 - 2002 should be avoided.

- 2) The current fishing pressure on juvenile yellowfin by both purse seiners fishing on floating objects (FADs) and artisanal fisheries is likely to be detrimental to the stock if it continues, as fish of these sizes are well below the optimum size for maximum yield per recruit estimated in 2002.
- 3) The Scientific Committee also noted that juvenile yellowfin tuna are caught in the purse-seine fishery that targets primarily skipjack tuna. Some measures to reduce the catches of juvenile yellowfin tuna in the FAD fishery will be accompanied by a decrease in the catches of skipjack tuna.

While there was greater consistency in the assessment results considered at this meeting than in 2002, the Scientific Committee emphasized that there remain considerable uncertainties in the assessments, as none as yet are able to fully explain the observed trends in standardized longline CPUEs over the duration of the fishery.

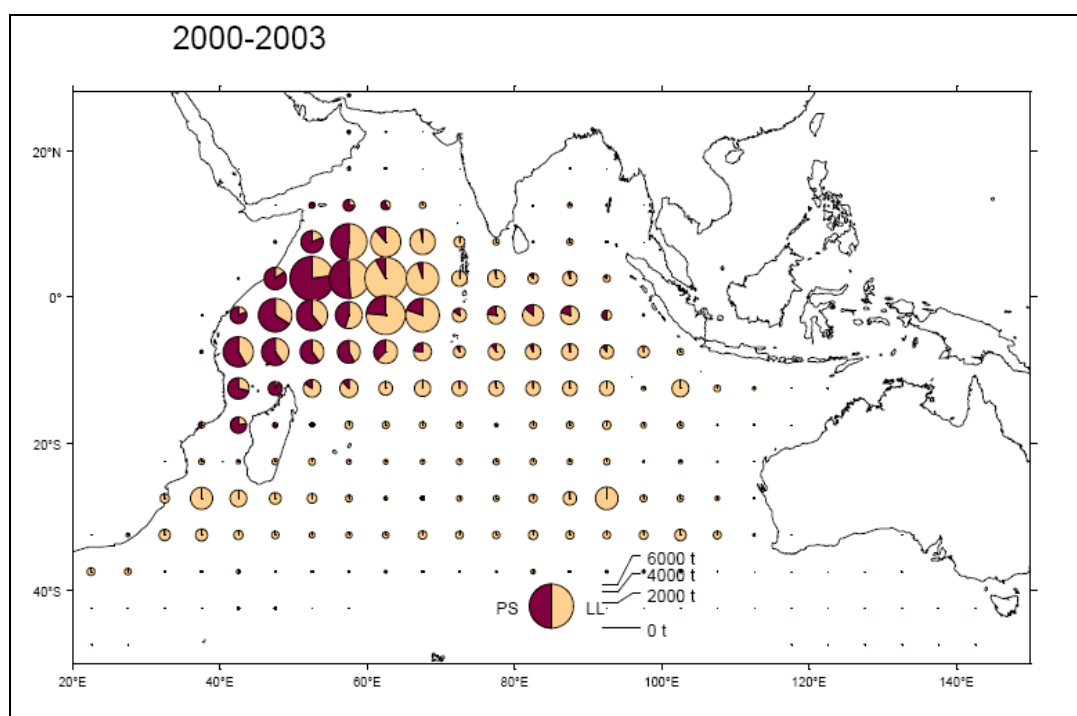
In interpreting the high catches of 2003 and 2004, the Scientific Committee noted that if the hypothesis of one or two high recruitments entering the adult stock is correct, the increased catches from these year classes are unlikely to be detrimental to the stock, but these catches would not be sustainable in the longer term unless supported by continued high recruitments.

On the other hand, there could be serious consequences if the hypothesis that there was an increased catchability during 2003 and 2004 is correct. In this case, the very large catches would represent a much higher fishing mortality and certainly would not be sustainable. Furthermore, they could lead to a sudden decline of the existing adult biomass of yellowfin tuna, potentially reducing the stock to below MSY levels. If such is the case, management action might be needed to reduce catches and fishing mortality to below the levels prevailing in 1999 – 2002 to allow the stock to recover.

If, as the Scientific Committee believes, the most likely cause of the exceptional catches is a combination of these factors, then some reduction of stock biomass is to be expected in the future. However, the extent of any such reduction will only become apparent in several years following detailed stock assessments.

#### 2.5.1.6 Bigeye tuna (*Thunnus obesus*)

Total catches of bigeye tuna by long liners operating in the Indian Ocean have steadily increased since the 1950s, exceeding 100,000 tonnes between 1996 and 2000 and reaching 115,000 tonnes in 2003. Japan, Indonesia, Taiwan and China are the principal countries that fish for the bigeye tuna resource. More recently (since the beginning of the 1990s), bigeye tuna have been caught by seiner vessels fishing for tuna focused on floating objects, in increasing numbers. Total catches of bigeye tuna using seines in the Indian Ocean in 2003 were 23,000 tonnes, in comparison with 29,000 tonnes in 2002. 46 vessels have been active in this fishery since 1994. Most catches of bigeye tuna by purse seiners correspond to juveniles of under 10 kg, which explains why seine fishing catches a larger number of bigeye tuna than long line fishing. Large bigeye tuna (over 30 kg) are mainly caught by long liners, particularly deep long liners.



Source: IOTC

Note : PS – purse seine; LL – longline

**Figure 9: Mean annual catches, 2000-2003, of bigeye tuna in the Indian Ocean**

Unlike yellowfin and skipjack tuna which are mainly caught in the Western Indian Ocean, bigeye tuna is also caught in the Eastern Indian Ocean. Catches of bigeye tuna dropped in 2000 and 2001 in comparison with previous years in the Eastern and Western Indian Ocean, but increased in recent years in the Western Indian Ocean. The increase in catches in the east is usually due to the increased activity of small long liners fishing for fresh tuna (this fleet began to operate in around 1995). In the Western Indian Ocean, catches of bigeye tuna are usually the result of the activities of large long liners and purse seiners. Note that the southern Mozambique Channel appears to be an important longline fishing ground for bigeye tuna as well as for swordfish and albacore tuna (see Figure 9).

The results of further assessments of the bigeye tuna stock using age-structured production models presented in 2004 to the WPTT (Working Party for Tropical Tunas of the IOTC) are more pessimistic than previous assessments.

The Scientific Committee had already noted with concern the rapid increase of catches of bigeye tuna at its meeting in 1999. Since then, catches have decreased for two of the past three years. Nevertheless, taking into account the results of the current assessment, which represents the best effort to date to analyse the available data in a formal context, it is likely that current catches are still above MSY and it is possible that fishing effort has exceeded the effort that would produce MSY.

The current level in catch in numbers of juvenile bigeye tuna by purse seiners fishing on floating objects is likely to be detrimental to the stock if it continues, as fish of these sizes are well below the optimum size for maximum yield per recruit.

The Scientific Committee also noted that juvenile bigeye tuna are caught in the FAD purse-seine fishery that targets primarily skipjack tuna. Some measures to reduce the catches of bigeye tuna in this fishery could be expected to result in a decrease in the catches of skipjack tuna. A reduction in catches of bigeye tuna from all gears is recommended, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or, at least, it should not increase further.



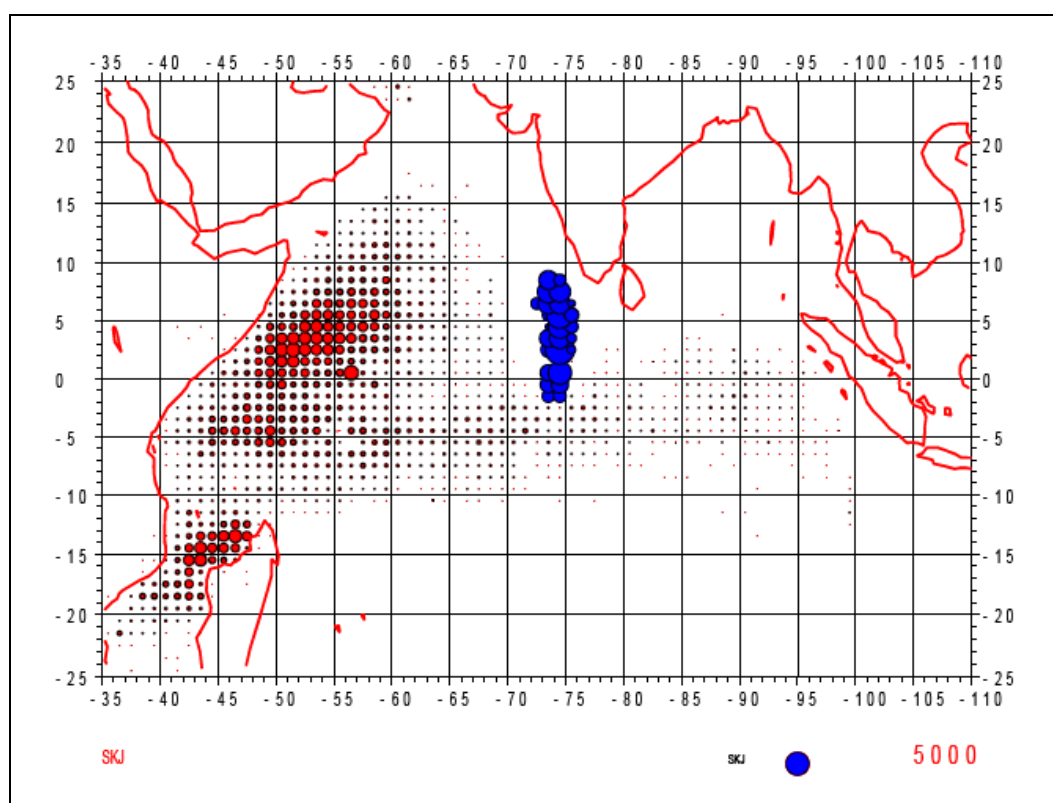
In 2005, the IOTC adopted Resolution 05/01 on conservation and management measures for bigeye tuna, which is to be based on the recommendations of the Scientific Committee Commission. Thus, the above-referred findings will be used as the basis for the definition of management measures to be adopted in the next session of the Commission, which is scheduled to convene in May 2006. This resolution states that Contracting and Co-operating Non-Contracting Parties (CPCs) shall limit their catch of bigeye tuna to their recent levels of catch reported by the Scientific Committee (convened in November 2005). Most importantly:

- the Taiwan Province of China is requested to limit their annual bigeye catch in the IOTC area to 35,000 tonnes;
- the Commission shall establish, for a three year period, interim catch levels for CPC's catching more than 1000 tonnes of bigeye tuna;
- during this three year period the Commission shall develop a mechanism to allocate, for specific time periods, bigeye tuna quotas for all CPC's;
- due consideration will be given to developing states, island states in particular, that are heavily dependent on fisheries.

#### 2.5.1.7 *Skipjack tuna (Katsuwonus pelamis)*

From the beginning of the 1980s with the arrival of large industrial purse seiners in the Indian Ocean, catches increased regularly in a significant way; and since 1999 skipjack tuna has become the principal species of tuna caught in the Indian Ocean, with catches exceeding 400,000 tonnes per annum. Currently, catches of skipjack come, overall, half from the industrial purse seiners and half from various traditional fisheries. The majority of catches however were taken in the Western Indian Ocean. In 2002, 482,000 tonnes of skipjack were caught, taking all fisheries into account.

The increase in catches of skipjack by purse seiners is associated with the development of fishing based on FADs; and currently 80% of catches of this species are made using FADs. The level of catches by purse seiners is showing an upward trend, probably due to an increase in fishing power and the number of FADs, as well as to improvements in the technology associated with these. Moreover, large numbers of juvenile bigeye tuna and yellowfin are caught in the course of seining using FADs, which target skipjack.



Source: IOTC

Note : red – purse seine; blue – baitboat

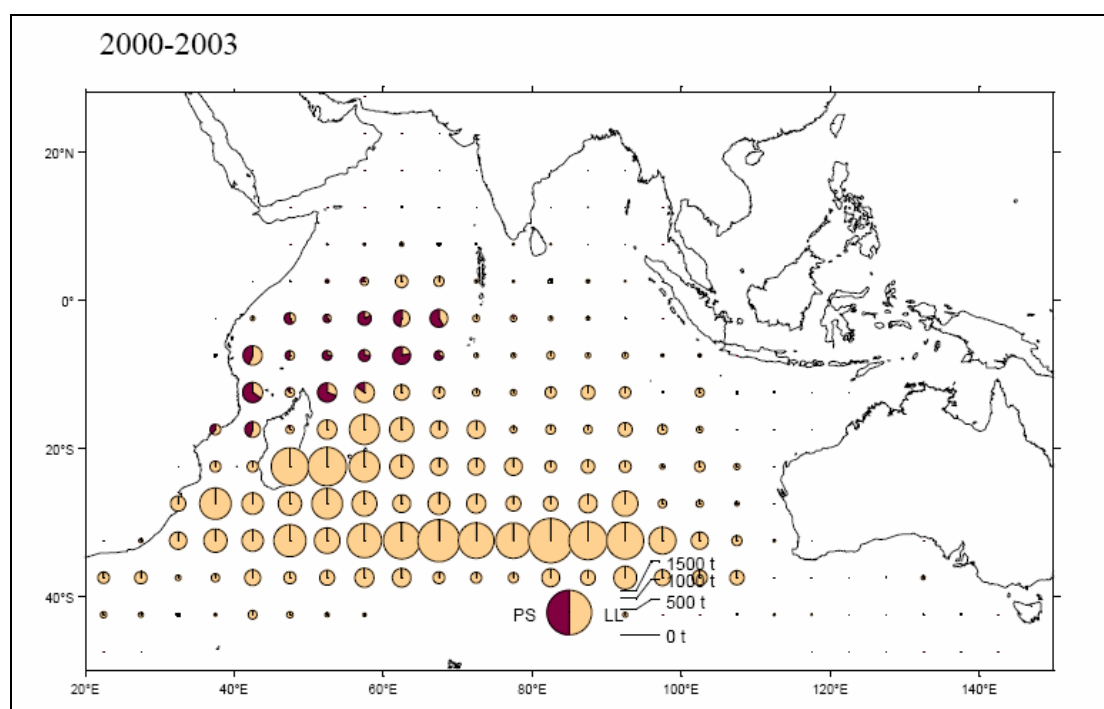
**Figure 10: Mean annual catches, 1995-2001, of skipjack tuna in the Indian Ocean**

The Working Party on Tropical Tunas has not made any specific management recommendations for the skipjack stock. However, the life history characteristics of skipjack tuna, the information presented in the documents reviewed, and the information in the stock status indicators prepared during the meeting suggests that there is no need for immediate concern about the status of skipjack tuna.

#### 2.5.1.8 *Albacore tuna (Thunnus alalunga)*

Albacore is a species with a fairly broad longitudinal distribution. The RFOs in charge of managing this species consider that there are three separate stocks in the Atlantic Ocean: north and south stocks separated by the parallel 5°N and a Mediterranean stock. In the Indian Ocean, according to current information, albacore probably forms a single stock. With regard to the Pacific Ocean, there are probably two stocks, one in the North Pacific and the other in the South Pacific, with the separation line being the Equator.

In the Indian Ocean, it is important to point out that the southern Mozambique Channel appears to be an important part of the longline fishing ground for albacore tuna (Figure 11). The main spawning ground lies east off Madagascar.



Source: IOTC

Note : PS – purse seine; LL – longline

**Figure 11: Mean annual catches, 2000-2003, of albacore tuna in the Indian Ocean**

A stock assessment for Indian Ocean albacore was attempted in 2004 by the Working Party on Temperate Tunas. Results of the analyses conducted were considered unreliable, although one of the results suggested that current catch levels might not be sustainable. Other indicators, such as the average size in the catch and catch rates, have not shown declines in recent years.

Taking into account the absence of a reliable assessment of the status of albacore tuna and the need for a precautionary approach, the SC recommended that the Commission be very cautious in allowing increases in catch or fishing effort until the problems with the assessments have been resolved.

#### 2.5.1.9 Southern bluefin tuna (*Thunnus maccoyi*)

Southern bluefin tuna is found only in the Southern Hemisphere, essentially in the Indian Ocean between 30°S and 50°S., with a few rare occurrences in the Atlantic and Eastern Pacific Oceans. This is the only tuna stock that straddles three oceans. Southern bluefin tuna reproduces in the far south of Java (Indonesia) and is managed as a single stock.

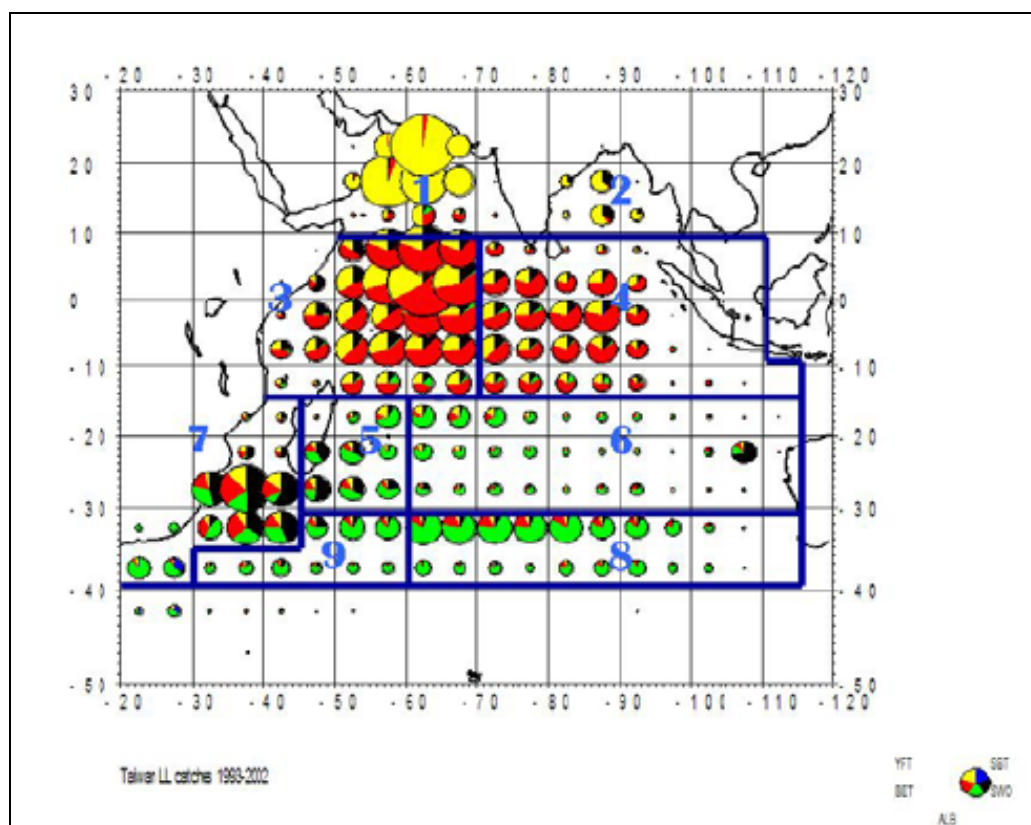
The current total catch (2003) has risen to approximately 14,024 tonnes (preliminary data), and is in keeping with the falling trend of total catches observed in comparison with the maximums recorded in 1999 (19,529 tonnes), in 2001 (16,026 tonnes) and in 2002 (15,212 tonnes). In the course of the period 1952-2003, 79% of the catch was made with the long line and 21% with surface devices, principally using seines and pole and line/reels. The proportion of the catch made by surface fisheries reached the record level of 50% in 1982, reduced to 11-12% in 1992 and 1993, then rose again to approximately 30% after 1996. The Japanese longline fishery (catching older fish) obtained its record catch of 77,927 tonnes in 1961 and the Australian surface fishery (catching young fish) recorded its maximum catch of 21,501 tonnes in 1992. New Zealand, Chinese Taipei and Indonesia have also fished for Southern bluefin tuna since the 1970s - 1980s, and Korea started up its fishery in 1991. In total, 73% of catches of southern bluefin tuna were made in the Indian Ocean, 21% in the Pacific Ocean and 6% in the Atlantic Ocean. Catches made in the Atlantic vary considerably, fluctuating between 400 tonnes and 8,200 tonnes since 1968. They achieved an average of 1,000 tonnes during

the last 20 years and reflect the movements of the long liner effort between the Atlantic and Indian oceans. Fishing in the Atlantic essentially takes place off the southern extremity of South Africa. Apart from a few anecdotal declarations for the Indian Ocean, Community fleets do not fish this stock.

Evaluations relating to southern bluefin tuna were updated at the 5th meeting of the CCSBT stock evaluation group, which was held in Korea in 2004. Current evaluations suggest that the reproductive biomass of southern bluefin tuna represents a small fraction of its original biomass and is located well below that of the 1980 biomass. The estimate is that this stock is well short of the level allowing maximum sustained yield. Re-establishing the biomass of the reproductive stock would almost certainly increase sustainable production and would provide security in the event of unexpected environmental phenomena.

#### 2.5.1.10 *Swordfish (Xiphias gladius)*

In the Indian Ocean, swordfish is caught as a target species or an accessory species in most longline fisheries in the Indian Ocean, but is caught only rarely with a seine. Since the beginning of the 1990s, Taiwan has been the top country in terms of catches of swordfish in the Indian Ocean (41 to 60% of total catches; Figure 12). Taiwanese long liners, particularly in the equatorial South West and West zones of the Indian Ocean, target swordfish using surface longline at night. These nocturnal sets contrast with the diurnal sets of Japanese and Taiwanese longliners targeting tuna. During the 1990s, a number of coastal or island states, in particular Australia, France (Reunion), the Seychelles and South Africa developed longline fisheries targeting swordfish, using monofilament equipment and light sticks at night. These devices obtain catch rates that are significantly higher than the Japanese or Taiwanese long lines. Consequently, the fisheries of these states have expanded rapidly, to the point of catching over 10,000 tonnes per annum at the end of the 1990s.



Source: IOTC

Note : yellow-yellowfin; red-bigeye; green-albacore; black-swordfish; blue-bluefin

**Figure 12: Longline catches of the important Taiwanese fleet, 1993-2002, indicating the areas used in CPUE standardisation**

Note that the southern Mozambique Channel is an important fishing ground for both surface longliners, targeting swordfish primarily as well as sharks, and deep longliners, targeting bigeye, yellowfin, and albacore tuna. However, the number of vessels from the major Taiwanese fleet actually taking up a license to fish in Mozambican waters is limited (2 in 2004). Instead, the foreign longline fleet fishing in Mozambican waters appears to be dominated by Japanese longliners (60 in 2004), which target deep-swimming tuna primarily (see Section 2.3 on Fleets)

An examination of stock indicators suggests that there has been a marked decline in swordfish in the Indian Ocean since this species began to be targeted at the beginning of the 1990s. Although uncertainties persist because of the poor quality of data notified by Taiwan, indicators from previous evaluations suggest that the situation could be more worrying in the Western part of the Indian Ocean than in the Eastern part. Total catches have dropped slightly over the last five years, after the peak of 36,000 tonnes in 1998. However, the actual effort (estimated by dividing catches by the standardised Japanese PUE) continued to increase during this period. This suggests that the reduction of catches is not due to a drop in actual effort, but is more likely to be due to a drop in the biomass of swordfish. The apparent loyalty of swordfish to certain zones is a particular cause of concern, as this may lead to localised depletion of stock. The spatial structure of the CPUE suggests that this could already be the case in the Southwest Indian Ocean.

On the basis of the stock indicators the Scientific Committee concluded that the current level of catch (about 32,000 tonnes) is unlikely to be sustainable. Of particular concern are the trends in abundance of swordfish in the western Indian Ocean, where the highest catches are currently taken. The spatial structure of the CPUE suggests that there may already be overfishing of swordfish in the southwest

Indian Ocean. However, these reductions in catch rates have not been accompanied by reductions in average size of the fish in the catch, as has been the case in other oceans. The Scientific Committee expressed concern regarding the very rapid increase in effort targeting swordfish in other areas of the Indian Ocean and the relatively large incidental catch of swordfish in fisheries targeting bigeye. These increases in effort exploiting swordfish have continued since 2000. However, there is no specific management advice at present.

#### 2.5.1.11 Sharks

Surface longline fisheries targeting tuna and swordfish are associated with the incidental catch of sharks. Some sharks are of a high value and are considered as target species to be retained such as blue shark (*Prionace glauca*) and shortfin mako (*Isurus oxyrinchus*). A recent report<sup>18</sup> submitted to the IOTC on IUU fishing suggested that there are around 150-200 vessels catching shark in the Indian Ocean, with around 70% flagged in Taiwan. In Mozambique, most of this longline fleet hold tuna licences, but many of the vessels target shark. The report states that fishery patrols have come across some long liners which have switched to nets in order to catch shark more effectively.

EU longline vessels fishing under the Agreement are catching around 6,000 tonnes in the southern Mozambique Channel, of which around 50% are sharks (blue shark - 80%; shortfin mako – 20%)<sup>19</sup>. There are nevertheless a large number of ray and shark species that are also caught but not reported, as they are discarded at sea.

The average annual EU catch of sharks is around 7,300 tonnes in the Western Indian Ocean, which represents around 83% of the declared total shark catch. Taiwan has a significant retained shark catch of 1,000 tonnes (11% of the total). But these are part of a larger fleets using surface longline (e.g. Reunion, Seychelles, South Africa, Taiwan), where there appears to be a serious problem of under-reporting in the case of sharks. A recent study of the shark fin trade in Hong Kong estimated that the total catch of sharks must be between 3 and 5 times that reported to FAO, between 1.1 and 1.9 million tonnes per year<sup>20</sup>. Between 66% and 80% of the total catch is therefore unreported, and probably 50% of the total catch derives from high seas waters.

The Scientific Committee (SC) of the IOTC has been requested to provide preliminary advice on the stock status of key shark species (e.g. blue and shortfin mako shark), but it has noted that the existing data in the IOTC databases are almost certainly insufficient to achieve even the objective of providing preliminary advice on stock status by 2006. The SC further noted that as sharks are the main bycatch of tuna fisheries, and given the way in which most sharks are processed (i.e. only the carcasses and/or fins tend to be kept on board), the collection of bycatch data by observers was of utmost importance, and it may be the best way to obtaining reliable detailed statistics.

In recognition of the potentially high catches of shark that may be taken specifically for the shark-fin trade, and in response to the FAO International Plan of Action on Sharks, IOTC has adopted Resolution 05/05 concerning the conservation of sharks caught in association with fisheries managed by IOTC, limiting the shark fishing activities in fisheries managed by IOTC.

This includes (CPC: Contracting Parties and Cooperating Non-Contracting Parties):

- CPCs shall take the necessary measures to require that their fishermen fully utilize their entire catches of sharks. Full utilisation is defined as retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing.

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<sup>18</sup> IUU Fishing on the High Seas: Impacts on Ecosystems and Future Science Needs , FINAL REPORT, , Marine Resource Assessment Group, August 2005

<sup>19</sup> Similar to South African longline data in 2004; blue sharks accounted for approx. 60% and shortfin mako 25%

<sup>20</sup> Marine Resource Assessment Group, 2005

- CPCs shall require their vessels to not have onboard fins that total more than 5 % of the weight of sharks onboard, up to the first point of landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5 % ratio through certification, monitoring by an observer, or other appropriate measures.
- The ratio of fin-to-body weight of sharks described in paragraph 4 shall be reviewed by the scientific committee and reported back to the Commission in 2006 for revision, if necessary.

The practicalities of supervising this process will be a considerable challenge due the storage process, i.e. fins are normally dried offshore then frozen in large sacks which may be difficult to detect/easy to conceal during the landing process unless provision for adequate monitoring is in place.

#### *2.5.1.12 Other under exploited marine resources*

In relation to other potential offshore resources that may be under-exploited, there is very limited information. The general view among Mozambican scientists from the Instituto de Investigação Pesqueira (IIP) that have been involved or followed in the various research surveys is that potentially unexplored resources are limited and most probably not economically viable. Some potential resources such as orange roughy are present in Mozambican waters, but in low abundance. The identification of alternative deep-water resources, apart from the well-known deep-water crustaceans, appears to be uncertain.

#### *2.5.2 Overview of stock status and utilisation*

Considering the above, the following Table 25 shows the estimated potential and level of exploitation, taking into account the recommendations of the Fisheries Master Plan, as well as data on current yields and assumed current level of exploitation.

The Fisheries Master Plan (1995) presents a maximum potential of about 400,000 tonnes (see following Table). Current estimates of artisanal fisheries production are in the range of 70-120,000 tonnes, based on a nation-wide census in 2002 and recent improvements in sampling of artisanal landings and effort. On the other hand, industrial fisheries production is around 40-50,000 tonnes.

It is important to point out that the official statistics from DNAP (Direcção Nacional de Administração Pesqueira) do not adequately cover bycatch and discarding. Estimates of bycatch in the industrial and semi-industrial trawl fisheries range between 1 and 20% of haul catches, as determined by research surveys<sup>21</sup>. Total bycatch from the shallow-water shrimp fishery is estimated at about 40,000 tonnes<sup>22</sup>, but this is probably in the range of 40,000 to 100,000 tonnes. A rough estimate of total catches may be in the range of 120,000 to 260,000 tonnes. It is most likely closer to the higher end of the range, assuming the following:

- Shallow-water shrimp: 10,000 tonnes
- Deep-water shrimp: 2,000 tonnes
- Fish: 220,000 tonnes
- Freshwater fish: 15,000 tonnes
- Tuna and tuna-like: 15,000 tonnes

An updated review of estimated potentials is not available. Furthermore, the origin of these estimates is not documented in the Fisheries Master Plan (1995) or in other relevant strategic documents, where the same information is often reiterated. These estimates appear to have been based on rough calculations and educated guesses based on scattered data on the fisheries, general knowledge about the biology of the stocks and common sense. Such indications may be valid in respect of the general

<sup>21</sup> e.g. Brinca *et al.* 1983

<sup>22</sup> Fenessy *et al.* 2004

trends (highly or lightly exploited), but quantitative estimates regarding potential should be treated with caution. Note that only shallow-water shrimp are subject to formal stock assessments in Mozambican waters.

Thus, it must therefore be concluded that very little is known about the marine fisheries potential of Mozambique, except for the shallow-water shrimp and tunas, and that total potential may be overestimated.

Thus, the estimate of current level of exploitation is based on indications from IIP, the evolution of fishery over the last ten years, and the consultants' opinion. As a result, in the table below, in some cases, moderate or full exploitation is given in spite of low catches in 2005, but this is related to the assumption that official catches are highly misleading, as they do not take into account bycatch and discarding (e.g. large demersals, small demersals, deep-water fish, sharks). In other cases, low catches are the result of overexploitation of the stock (e.g. deep-water lobster, sea cucumbers).



**Table 25: Estimated potential from the Fisheries Master Plan (1995), including yield and level of exploitation for important resources. See text on the revised estimated level of exploitation.**

Resource	Est. Potential (tonnes) (1993)	Est. Yield 1993 (tonnes)	Est. Yield 2005 (t)	Level of Exploitation (from Master Plan)	Current Level of Exploitation
<b>Crustaceans</b>					
Penaed shrimp	19,100	11,522	8,489	Intense	Intense
Shrimp munde/tepwe	4,100	3,154	4,485	Intense	Intense
Deep-water shrimp	3,500	1,830	1,774	Moderate	Moderate/Full
Deep-water lobster	400	292	1	Intense	Overexploited
Deep-water crayfish	500	450	149	Moderate	Moderate/Full
Deep-water crab	800	309	159	Moderate	Moderate/Full
Rock Lobster	150	20	2	Low	Moderate
Mangrove crab	13,300	n.a.	n.a.	Low	Low
<b>Marine Fish</b>					
Large demersals	29,500	7,338	51		Moderate <sup>a</sup>
Large pelagics	37,000	4,212	14,780	Very low	Full <sup>b</sup>
Sharks	10,500	2,236	56	Low	Full <sup>c</sup>
Small demersals	116,500	15,875	1,633	Low	Full <sup>a</sup>
Small pelagics	131,300	35,894		Low	Moderate
Deep-water fish	500	250	197	Low	Full <sup>a</sup>
<b>Molluscs and others</b>					
Sea cucumbers	750	700	n.a.	Intense	Overexploited
Cephalopods	2,000	240	164	Low	Low
Algae	500	0	n.a.	Low	Low
Clams and other bivalves	2,200	200	n.a.	Low	Low
<b>Freshwater fish</b>					
Kapenta (Cahora Bassa)	15,000	4,000	12,991	Low	Full
Demersal fish (Cahora Bassa)	5,000	4,500	n.a.	Intense	Intense
Utaka (Lake Nyassa)	22,000	4,000	n.a.	Low	

Source: DNAP; (n.a. – not available)

- a) based on the assumptions of bycatch estimates
- b) based on indications that tuna resources are more or less fully exploited in the IO
- c) based on the general problem of non-reporting and under-reporting of sharks, demersal and pelagic species

With respect to offshore resources, the potential for tuna has been estimated by IIP at 37,000 tonnes per year, without distinguishing species, but the reported catches by foreign vessels have been an average of 4-5,000 tonnes in recent years. The high catch of almost 15,000 tonnes in 2004 is notable, of which about 12,000 tonnes was taken by EU vessels fishing under the Agreement.

In global terms, the general indication is that, even in the case of skipjack tuna, these species are fully exploited in the Indian Ocean, and that there are grounds for concern in relation to bigeye tuna, in particular. Furthermore, the current level of fishing is unlikely to be sustainable in the case of yellowfin tuna and swordfish.

There are no species-specific management measures currently in place for the major species in the Indian Ocean (Table 26). This is because of the general difficulty in producing reliable estimates of MSY for several of these species as a result of data limitations and quality. The Indian Ocean tuna fisheries is especially difficult in terms of data gathering, as there are numerous fleets and coastal states involved in the fisheries as well as increasing problems due to IUU fishing. However, based on the available information from the IOTC and the results of their analyses, a probable range of MSY is given by the consultants' in the following table.

**Table 26: Review of status of Indian Ocean tuna and tuna-like stocks, including species-specific management measures**

	Current 2004 Yield in t (5-year mean)	Estimated MSY (t)	Probable range of MSY (t)	Management Measures
Yellowfin ( <i>Thunnus albacares</i> )	495,000 (343,400)	Not known	300-345,000	None
Bigeeye ( <i>Thunnus obesus</i> )	106,000 (118,800)	96,000		To be defined <sup>23</sup>
Skipjack ( <i>Katsuwonus pelamis</i> )	529,000 (528,000)	Not known	500-600,000	None
Albacore ( <i>Thunnus alalunga</i> )	20,000 (30,600)	Not known	20-30,000	None
Swordfish ( <i>Xiphias gladius</i> )	31,000 (31,400)	Not known	20-25,000	None

Source: IOTC; (B – biomass; F – fishing mortality; MSY – maximum sustainable yield)

## 2.6 HEALTH AND SANITARY CONDITIONS

Mozambique is authorized for the export of fishery products to the EC, excluding bivalve molluscs, echinoderms, tunicates and marine gastropods (Commission Decision 2002/858/EC of 29/10/2002). Mozambique is included in List 1 of third countries approved for export to the EU, figuring in the Annex of Commission Decision 97/296/EC “drawing up the list of third countries from which the import of fishery products is authorised for human consumption” as amended (Com. Dec. 2002/863/EC of 29/10/2002). The Competent Authority is the Ministry of Fisheries.

Regarding the authorization process, Mozambique received two DG SANCO missions for evaluating the health and production conditions of fishery products (30<sup>th</sup> November to 4<sup>th</sup> December 1998 and 28<sup>th</sup> May to 1<sup>st</sup> June 2001). A 3<sup>rd</sup> mission was due to be undertaken from 28<sup>th</sup> March 2006 for 2 weeks. The results of this are not available at present.

The last DG Sanco mission in 2001 concluded that:

- The Mozambican legislation cannot be considered as equivalent to EC legislation for potable water, additives and heavy metals.
- The activities of the Competent Authority can be generally considered as harmonised. Staff have received training and are motivated. Nevertheless, the official supervision of establishments and vessels is still deficient, in particular the follow-up of the problems identified by the inspectors, the reporting of the inspection visits and the assessment of the own-checks.

<sup>23</sup> Implementation of measures is expected in May 2006 in connection with the next session of the IOTC, scheduled for May 2006 (see section on bigeye tuna).

- The situation regarding operation and quality management of laboratories can be considered as satisfactory.
- The procedure for issuing export health certificates is in place and can be considered as satisfactory. Nevertheless, the model of the export health certificate is not in compliance with the EC requirements.

Guarantees were sought from the Competent Authority that these deficiencies were corrected, and these were accepted by the Commission in 2002.

#### 2.6.1.1 *Description of the Mozambique system for Quality assurance of health conditions for fishery products*

The relevant national legislation is Decree nº 10/98 which approves the *Regulamento de Inspeção e Garantia de Qualidade dos Produtos da Pesca* (Regulation for Inspection and Quality Assurance of Fish Products - RIGQ), laying down specific provisions governing health conditions for fishery products. The RIGQ was drafted to be equivalent to Directives 91/493/EEC and 92/48/EEC as regards health conditions in production units during operations and the quality of fishery products.

The RIGQ includes the following matters: Own-checks/HACCP; Export health certificates for fishery products; Organoleptic criteria; Parasites; TVB-N; Additives; Sanctions for infringements. Other relevant legal acts specify the objectives and competencies of the Ministry of Fisheries, crimes in relation to public health issues and in particular foodstuff hygiene; hygiene requirements for food establishments; specifications on the quality of water used in production units in the fisheries sector; procedures for the approval of fishery product establishments/vessels; and procedures for the export health certification and the laboratory analysis.

The Competent Authority (CA) of Mozambique was, until 2005, the Departamento de Inspeção de Pescado, Department of Fish Inspection (DIP) of the Direcção Nacional das Pescas, National Fisheries Directorate (DNP), under the umbrella of Ministério das Pescas/Ministry of Fisheries (MP). This structure has been reorganized and now the Competent Authority responsibilities are executed by the Instituto Nacional para Inspeção do Peixe, (INIP - National Institute for Fish Inspection) which is an administratively autonomous unit under the umbrella of the Ministry of Fisheries. The institute integrates both inspection and laboratory services, each in a separate department. The Institute contains 4 main departments, Departamento de Licenciamento Sanitário / Department for Sanitary Licensing, Departamento de Certificação Sanitária / Department for Sanitary Certification, departamento de Laboratórios / Department of Laboratories, Departamento de Administração e Recursos Humanos / Administration and Human Resources.

The Institute has a central organization located in Maputo. The staff of the CA consists of 44 persons (Veterinary Inspectors, Biologists, Chemists and Senior Technicians). Personell located at the headquarters are 22 (1 PhD, 1 Master, 10 licenciados, 8 with Secondary degree and 2 with basic degree). New headquarters were opened in 2005 in a building financed by ICEIDA, with support totalling about 400,000USD.

At central level INIP has planning and supervisory duties, while the fishery products inspection system is organized at provincial level, through the DPIP, *Delegação Provincial de Inspeção do Pescado* / Provincial Delegation for Fish Inspection, integrated in terms of administration and logistics in the *Serviço Provincial de Administração Pesqueira* / Provincial Fisheries Administration Services (SPAP).

Mozambique has a central laboratory of INIP in Maputo working as reference lab and across the country, 2 of the 7 DPIPs have laboratories, which work closely with the central laboratory. Fishing activity in the remaining provinces, which still have no effective fish inspection representation is only rudimentary.

In 2006 Mozambique has 77 approved freezer vessels (including 2 mother vessels) and 16 EU approved processing establishments. These include 2 storage facilities and 3 processing plants with raw material supplies from aquaculture.

#### *2.6.1.2 Hazards and hazards control of fishery products in Mozambique*

Mozambique exports mainly frozen shrimps to the EU, in particular *Penaeus* spp. and *Metapenaeus* spp., accounting for about 7,000 tonnes to the EU and around 2,000 tonnes to other markets (Section 2.8). These products are characterized to be low risk products (frozen shrimp, caught from the wild, frozen at sea and expected to be cooked before consumption). The main potential hazards are excess of sulphite (chemical hazard) and microbiological hazards due to poor hygienic conditions during post-harvest and processing. There has been one rapid alert in relation to excess sulphites in shrimp, in November 2004.

Aquaculture shrimp is an increasing trend for exports to the EU. This type of product is of higher sanitary risk due to possible application of veterinary medicines during production or in feed. The Mozambique CA has in place an approved monitoring plan for controlling residues of veterinary drugs, and also heavy metals and other environmental contaminants, which also apply to other fishery products. Analytical determination is done in South Africa, at the cost of companies.

#### *2.6.1.3 Planned Support*

ICEIDA will continue financial cooperation with Mozambique, specifically aiming at quality and safety of fishery products. Total funds for 2006 are US\$1,2million. Training will be provided to a value of US\$100,000. Further funding in 2007 is possible, although not yet confirmed.

Funds from EU FPA with Mozambique (€100,000/year) have been utilized for equipment and missions to the provinces and in future are aimed to be utilized for laboratory supplies. UNIDO will give support for the acquisition of equipment for testing heavy metals (US\$137,090). There are also plans to include Mozambique in a regional component of the Regional EDF Funded Project “Strengthening Fisheries Products Health Conditions in ACP/OCT Countries”, although there are no indications of the allocation funds and start date. The Mozambique authorities sent a specific request in February 2003 specifying training, equipment and technical assistance needs, but without any specific response to date.

## 2.7 LOCAL FISH TRADE AND DISTRIBUTION

### 2.7.1 Fish supplies and consumption

Per capita fish supply as food for direct human consumption is estimated by the consultants to be about 7.3 kg/year (Table 27). The demand for fish in the coastal areas is high and is expected to grow, reflecting in part population growth (2.6% annually). In order to maintain the present level of *per capita* fish consumption, an annual increase in supplies of some 1,000 tonnes would be required.

**Table 27: Estimated Food balance concerning Fish supplies (2003)**

	Production	Imports	Exports	Feed	Total fish as food supply	Per caput supply
	tons live weight					kg/year
Fish for direct human consumption	132*	32**	15	12	137	7.3

Source: FAO and consultants calculations

\*) Includes an estimate of 100,000 tonnes of unregistered artisanal fisheries (according to IDPPE).

\*\*) Apparently does not account for canned fish products imported from EU.

Based on estimated total population of 18.9 million

Imported fish products supplied to national fish markets are in general providing a supplementary source of animal protein for the majority of the population. The bulk consists of mackerel and cavala imported from the Republic of Angola and Namibia. The level of imports is about 32,000 tonnes/annum in 2003.

### 2.7.2 Landings from industrial fisheries

The most important industrial fisheries consist of shrimp products. All of the shrimp production is sold in export markets apart from exceptional circumstances for broken/peeled shrimp which may receive further processing onshore.

The main markets are Europe (Spain and Portugal), and to a lesser extent Japan and South Africa. By-catches are of the order of 70-80% of total catches. Only a small proportion of the higher value bycatch is retained onboard, with the remaining being rejected or sold for the local market (mainly demersal fish such as *corvina*). Some of the big companies such as Pescamar, land a higher proportion of by-catch, putting their fish catch in fish stores owned by the company (mainly at Beira). Fish going to local market may also be derived from a substantial but undocumented transfer at sea between the industrial and artisanal fleet.

Two thirds of the semi-industrial fleet is based in Beira (26%) and Maputo (40%). Other locations are Quelimane (11%), Inhambane (5%) and Angoche and Vilanculos with one vessel each. Demersal fish from this fleet is distributed locally, although main catches (shrimp) are exported.

Inland fisheries are focused on Lake Cahora Bassa (16%) where fishing for the freshwater small pelagic kapenta is undertaken, with much of the production dried and marketed in Zimbabwe, Malawi and Zambia.

### 2.7.3 Landings from small scale fisheries

Products from the artisanal fishery are mainly consumed directly in nearby communities and urban settlements, consisting of a high subsistence type of activity.

A large proportion of the catches in the artisanal sector are caught with beach seines and consist of fish classified as grade three, i.e. mainly small fish including e.g. *hilsa kelee* and other small species, affordable and appreciated by most rural and suburban consumers, who constitute the main market for

artisanal fisheries. A substantial proportion of artisanal landings are dried and distributed to the interior. Artisanal fisheries in Sofala are highly productive, and from this region internal markets in Zambezia, Manica, Tete and Niassa provinces are served.

A small proportion (possibly a few hundred tonnes) of the artisanal production comprises higher value demersal fish caught with hook and line. Landings take place close to major urban centres, such as Maputo and Beira; the fish may be preserved with ice and supplied to higher value markets in these centres, or packed for export in frozen or fresh form.

Producer prices for fresh fish are generally better than for dried, and prices in general are substantially higher in the major urban centres. However the possibilities for making use of these opportunities are very limited, as most artisanal fishing centres are situated in less accessible areas with poor access infrastructure, and without electrification for production of ice. This lack of infrastructure is a major constraint to improved fish distribution in Mozambique.

## **2.8 PORTS AND INFRASTRUCTURES**

### **2.8.1 Port facilities**

The transport sector has been integral to the economy since colonial times owing to the country's strategic position with respect to its landlocked neighbours. Road and rail infrastructure provides access to the sea for landlocked areas in southern Africa, such as Malawi and Zimbabwe (to the ports of Nacala and Beira respectively), and northern South Africa (to Maputo). Transshipment was a major source of economic activity during the colonial period, although the sector fell into decline after independence owing to war and sabotage orchestrated by South Africa and its proxies. Investment in transport after the civil war has focused on redeveloping these links, embodied in proposals to develop the Beira, Nacala and Maputo corridors. Public-private partnerships have been established to mobilise foreign investment in port, rail and road infrastructure. These are expected to facilitate large increases in traffic volumes, which are still at a fraction of their former level.

There are three larger ports in Mozambique: Maputo, Beira and Nacala, and several small ports: Inhambane, Quelimane, Pebane, Angoche, Pemba. Mozambique harbours provide services not only for national customers but also, and mostly, for the neighbouring countries. Perhaps most of the foreign services provided by Mozambique are through its harbours. Both the road and railways networks are built to facilitate regional trade rather than the national economic integration of the country. The transport sector used to be an important foreign exchange earner from the transit facilities offered to the neighbouring countries.

Mozambique harbours handle annually several tons of cargo to and from: Swaziland, South Africa, Zimbabwe, Zambia, Malawi and Congo. The total cargo handled in 1996 was about 8.4 million tonnes.

### **2.8.2 Fishing ports**

In relation to fisheries, the industrial fleet makes use of only three ports that can offer the required basic services of handling, supply of fuel and water and cold storage: Quelimane, Beira and Maputo. The fishery ports of Maputo, Beira, Quelimane and Angoche are managed directly by the Ministry of Fisheries. The flood disaster in 1999 also destroyed harbours and fishing ports in several places in Mozambique, including Beira where the industrial and semi-industrial fleet in Beira now has to use the commercial port. A financing proposal to rehabilitate Beira fishing port is currently being analysed by the Islamic Bank. A new small fishing port has also been built in Angoche.

Local shipyards in Pemba, Beira, Inhambane and Maputo have built almost all of the semi-industrial vessels in the sector (about 100 vessels). The management of the shipyard in Beira, BeiraNave, has been taken over by the private fishing company, Pescamar, with the intention of expanding and improving the facilities. One of the objectives is to capture business from the large tuna fishing vessels operating in the region.

### **2.8.3 *Ice production and refrigeration***

There are ice production facilities in these fishing ports, most of them in private hands. In the case of government managed capacity, Maputo fishing port has a limited ice production of about 6 to 7 tonnes/day, while in Quelimane this is down to about 2 tonnes/day. The cold storage facility of Maputo fishing port is operating, but there are also several private facilities in Maputo, Beira, Nacala and Pemba.

### **2.8.4 *Fishing gear and other inputs***

Fishing gear is imported and fishermen often complain of the difficulties in finding it in local shops and its high prices. In all the regions of the country local carpenters build artisanal boats and in some places there is also a tradition for making traditional fishing gear. Outside the main cities, in particular the provincial capitals, no support facilities to the artisanal fisheries can be found. Over recent years IDPPE has facilitated the supply of technical inputs (fish gear and small scale processing) and related extension services to artisanal communities in various parts of the country with main emphasis in Nampula province through the NAFP project (Nampula Artisanal Fisheries Project).

## **2.9 PROCESSING AND MARKETING ACTIVITIES**

### **2.9.1 *Export processing***

The export fish processing industry of Mozambique upgraded significantly to meet EU requirements. In the last six years the number of establishments approved for export to the European Union market has increased from five establishments (out of a total 20 exporters) to 16 approved in 2006. These include 2 storage facilities and 3 shrimp aquaculture processing plants. Fish processing facilities have been set up lately in some regions and some are under construction at the time of the mission.

Processing plants supplying the domestic market are poorly developed with respect to hygienic and sanitary conditions. The numbers of operating establishments serving the local market is not available, and much processing is undertaken at landing sites.

The last Fisheries Master Plan gave priority to moving from on-board processing to land based value added processing, based on an assumption that this would generate a positive impact on the Mozambican economy from the fisheries. However, at present, the level of value added products in Mozambican exports is relatively small.

Shrimp is the main processed product. However shrimp (both deepwater and shallow water) is mainly frozen and packed at sea in vessels equipped with horizontal plate freezers. Most shrimp is treated with bisulphites to prevent melanosis and is frozen head on. Some head off shrimps are also produced. Some shallow water shrimp from the semi-industrial vessels which do not carry freezers are processed (sorted, packed and frozen) in facilities on land. Fish bycatch is either discarded, transferred to artisanal vessels or, if retained, is eviscerated and cleaned onboard with no other type of processing operation. Grade 1 is exported.

Land based facilities may also produce peeled shrimp to special order. There is presently one processing company based in Angoche operating with shrimp catches from small open deck fibreglass 9m vessels, and also supplied by other artisanal fishers. There is an active trade in export of fresh fish from the semi-industrial sector, with gutting onboard, and packing and icing conducted on the vessel, or in some cases in shore based establishments. Line caught fish may be subject to some additional processing onshore such as filleting and freezing,

### 2.9.2 *Artisanal processing*

Raw products from the artisanal fishery are mainly sold through local markets or to regional markets (iced or frozen products). Electricity is only available in major urban centres and hence the principal conservation method by artisanal fishermen consists of sun drying, smoking or salting and drying.

Artisanal fish processing takes place throughout the country. About 54% of the 617 permanent fishing centres identified in the Census 2002 have some processing infra-structure (see Table 28). Ice production facilities and chill storage are available at about 10% of the locations. Fish by-catch from the semi-industrial shrimp trawl segment is often also received by this sector, and smoked-dried in artisanal units along the coast, mainly concentrated in Chiloane. Preserved fish is distributed to rural communities and to urban townships.



**Table 28: Sea Fishing centres with processing infrastructures**

Provinces	Fishing Centres	Permanent centres	Centers with available processing infrastructure	Centers undertaking processing					
				Drying	Salting Drying	smoking	Salting smoking	Ice	Others
Cabo Delgado	141	130	129	75	68	2	1	23	38
Nampula	158	155	54	104	68	78	1	0	7
Zambézia	114	108	16	66	65	43	1	0	2
Sofala	92	83	97	53	86	2	0	17	3
Inhambane	106	95	36	7	41	3	17	1	7
Gaza	13	12	0	0	1	2	0	3	0
Maputo	34	34	3	3	0	1	0	23	24
Total	658	617	335	308	329	131	20	67	81

## 2.10 AQUACULTURE AND INLAND FISHERIES

### 2.10.1 Inland fisheries

Artisanal fisheries are present in all territories, along the coastal area, bays and estuaries as well as in inland waters such as rivers, small lakes, flood plains, and the two major freshwater bodies Lake Niassa and the reservoir of Cahora Bassa.

The estimated potential fish catch in rivers and lakes is 34,000 tonnes. In recent years, due to massive investment, especially from the private sector, catches in Lake Malawi/Niassa (the largest natural lake – 40 000 ha) and in the artificial Lake Cahora Bassa, have increased dramatically.

Lake Cahora Bassa, in the northwest of the country, has attracted big investments because of the high price of small pelagics (*kapenta*) in the regional market (Malawi, South Africa and Zimbabwe). In 2001, the landings of *kapenta* in Mozambique from Lake Cahora Bassa was around 12,000 tonnes.

Inland areas are characterized by artisanal beach seining, seining (*chirimila*), traps and line fishing in Lake Niassa, gill nets, traps and line fishing in the reservoir of Cahora Bassa and line fishing, traps and gill nets in the rivers and flood plains. The catch is almost exclusively geared towards local consumption, i.e. national markets, with the exception of freshwater *Kapenta* fishing in Cahora Bassa.

The *kapenta* fishery from Lake Cahora Bassa provides raw material for small scale sundrying firms, which serve regional export markets.

*Kapenta* fishery is undertaken using a semi-industrial fleet with the global production being exported to neighbouring countries, principally Zimbabwe and to some extent Malawi.

### 2.10.2 Aquaculture

#### 2.10.2.1 Overview

The potential for aquaculture development in Mozambique are enormous. Mozambique has a coast line of 2,780 km, favourable climatic condition (tropical and sub-tropical climate), unpolluted environment, low population pressure and extensive resources, a potential of 33,000 ha of land suitable for coastal aquaculture, existence of indigenous shrimp species of the genus *Penaeus* (*P. monodon*, *P. indicus*, *P. Japonicus*) as well as tilapias.

Although there is vast potential, development has been minimal. Several constraints have until now limited investment. These are a lack of reliable infrastructure (energy, accessible roads or transports, logistics), lack of technical skills and skilled labour (there are no professional or higher education courses in aquaculture or aquaculture production). Lack of feed materials, resulting on reliance on imported inputs, and a lack of fish hatcheries to supply juveniles.

Presently, 2006, the aquaculture industry consists of commercial farms of marine shrimp (*Penaeus spp.*) and seaweed (*Kappaphycus spp.*) and artisanal tilapia (*Tilapia spp.*) farms.

#### 2.10.2.2 Shrimp farming

There are several producers operating intensive shrimp farms in coastal zones. The species grown are Tiger and White shrimp and they are produced by three private companies (with foreign capital):

- SOL & MAR, located at Beira (Chinese investment of 12 million USD);
- AQUAPESCA, located at Quelimane (French investment of 25 million USD);
- INDIAN OCEAN AQUACULTURE, located at Pemba (German/US investment of 22 million USD).

In total these companies have 2,500ha of ponds and generated 1,000 tonnes production in 2005, of which 90% was exported, 730 tonnes to the EU (Portugal, Netherlands and principally France) and 170 tonnes to others (Japan, USA, South Africa).

All 3 companies have hatcheries and also processing facilities (approved for EU exports) having initiated activity in 2003/2004. The processing establishment in Quelimane produces shrimp for further processing (cooking) in France to be sold in cooked chilled form. One of the companies also receives shrimp from artisanal and semi-industrial fisheries. The shrimp aquaculture employs about 1,300 persons with some 130 highly skilled foreigners of different nationalities (Indians, Asians, Europeans and Latin-Americans).

Shrimp producers are organized in an association (*Associação de Produtores de Aquacultura*) which aims to promote policy support from the Government, and is currently seeking to establish a national quality mark scheme, to differentiate the production from SE Asian products.

#### 2.10.2.3 *Tilapia farming*

Tilapia production is undertaken on a subsistence basis with few inputs and limited output, characterized by traditional artisanal family type operations mainly applied for self consumption and located inland. Local producers consist of 1 family/pond in average. There are about 4,700 ponds of 200m<sup>2</sup> average. Some are community operated. Total production was estimated at 100 tonnes in 2005. The species mostly cultured are Mozambique tilapia, *Oreochromis mossambicus*, Nile tilapia *O. niloticus*, *Tilapia rendalli* and common carp *Cyprinus carpio*. In addition other species available for culture are African catfish *Clarias gariepinus*, grass carp *Ctenopharyngodon idella*, Silver carp *Hypophthalmichthys molitrix*, bighead carp *Aristichthys nobilis* and freshwater prawn *Machrobrachium rosenbergii*.

#### 2.10.2.4 *Other species*

Algae production is also an artisanal activity developed by local communities supplying two foreign owned companies (Italian and Danish). Companies prepare the algae for extraction of carageen and export it to Denmark and the Philippines. The production was 20 tonnes in 2003 rising to 530 tonnes in 2005. Disease was the cause for the production breakdown in 2005. Until 2004 the activity involved around 2000 people.

#### 2.10.2.5 *Development activities*

The Ministry of Fisheries has an Aquaculture Department and has passed an Aquaculture Regulation, but as yet, there is no clear policy formulation with respect to national aquaculture policy. Issues to be addressed are aquaculture development and research, land and water use rights, infrastructure, human capacity, coastal zone planning and resource conflicts for coastal aquaculture, hatchery and feed investments, and disease management.

The Ministry has indicated that it may support the formation of an institute of aquaculture in a similar way to that of the existing INIP, IDPPE and IIP, which would undertake research in aquaculture development to promote artisanal activity and also on the disease control side. This would probably include delegation of inspection services covering aquaculture facilities. The MoF is also considering the possibility of using compensation received under any future FPA to support measures in favour of aquaculture development.

## 2.11 INTERNATIONAL TRADE

### 2.11.1 *Import and export tariff regime for fishery products*

No export tariffs are applied to fishery products. Import tariffs are 30% for all fish products from all sources, except for frozen horse mackerel below 18cm (which is supplied from Namibia) which are duty exempt.

### 2.11.2 *International trade in fishery products*

#### 2.11.2.1 *Exports of fishery products*

Table 29 shows the trends in export of fishery products. The fishing industry was the country's largest export earner before the advent of aluminium smelting, with shrimp typically accounting for 30-40% of export earnings. Annual fishery product exports from Mozambique range between 13,000 tonnes to 16,600 tonnes (from 2003 to 2005). Exports from Mozambique to the EU represent about 60% of all fishery product exports by weight. After the export of shrimp to the EU, the other major export trade is export of dried freshwater kapenta to neighbouring countries accounting for about 25% of overall fish product exports (by volume), as shown in Tables 30 and 31.

**Table 29: Total fish products exports from Mozambique**

	2003			2004			2005		
	EU	OC <sup>2</sup>	Total	EU	OC <sup>2</sup>	Total	EU	OC <sup>2</sup>	Total
Shrimp	6,777	1,621	8,398	7,377	1,702	9,078	8,858	1,573	10,431
Deepwater shrimp	375	637	1,012	321	583	904	814	751	1,565
Other crustaceans	94	489	582	65	274	339	47	389	436
Others	263	298	561	595	306	901	270	261	531
Kapenta <sup>1</sup>	0,0	2,757	2,757	0	5,149	5,149	0	3,615	3,615
<b>Total</b>	<b>7,509</b>	<b>5,802</b>	<b>13,311</b>	<b>8,357</b>	<b>8,014</b>	<b>16,372</b>	<b>9,990</b>	<b>6,588</b>	<b>16,578</b>

Source: INIP (Fish Export Competent Authority in Mozambique)

EU – European Union

OC – Other countries

<sup>1</sup> Dried freshwater fish from Cahora Bassa dam.

<sup>2</sup> Comprises mainly: South Africa and Japan for shrimp products and Zimbabwe, Malawi for Kapenta. Other countries with small amounts are also included (ex. China and Taiwan amongst others).

**Table 30: Principal export flows (2001)**

<b>Continent</b>	<b>Countries</b>	<b>Exported (tonnes)</b>
AFRICA	Democratic Republic of Congo	206
	Malawi	84
	Republic of South Africa	1,782
	Zambia	235
	Zimbabwe	1,118
	Sub-total	3,424
ASIA	Hong-Kong	13
	Japan	1,669
	Sub-total	1,682
EUROPE	Italy	242
	Portugal	3,658
	Spain	4,737
	United Kingdom	1
	Sub-total	8,368
Total		13,920

SOURCE: Ministry of Fisheries

*2.11.2.2 Exports to the Community*

Mozambique fish exports to the EU average between 7,000 and 8,000 tonnes/year. Frozen shrimp is the main product exported to the EU representing about 98% in value and quantity in 2003. The shrimp genus *Penaeus* is the most important, rising from 63% to about 80% since 1999, whilst the remaining 20% is deepwater red and rose shrimp. Spain and Portugal comprise about 95% (value and tonnage) of EU export destination of Mozambique fishery products, with a share around 61% to Spain and 34% to Portugal, as shown in Table 31 overleaf.

Note that Tables 30 and 31 are derived from different sources (Mozambique Ministry of Fisheries and Eurostat respectively, and that there are discrepancies between them).

Table 31: Mozambique fish products exports to the EU

Products	Country	1999		2000		2001		2002		2003	
		t	1000€	t	1000€	t	1000€	t	1000€	t	1000€
Shrimp Genus <i>Penaeus</i> <sup>1</sup>	Spain	3,884	34,019	4,443	47,784	4,154	44,117	3,750	37,383	3,817	34,633
	Portugal	350	3,047	465	5,303	586	6,195	1,142	11,160	1,363	9,978
	Total EU	4,267	37,393	4,974	53,534	4,985	52,391	5,040	49,741	5,379	46,202
Other shrimps <sup>2</sup>	Spain	527	3,898	667	6,427	473	3,471	398	3,494	288	2,207
	Portugal	1,685	14,317	1,672	16,884	1,536	14,906	982	8,743	1,021	7,784
	Total EU	2,496	20,201	2,902	28,374	2,350	21,639	1,563	13,592	1,513	11,738
Others	Total EU	327	1,745	703	3,274	856	4,106	594	4,639	226	1,188
Total Shrimps	Total EU	6,764	57,594	7,875	81,908	7,336	74,031	6,603	63,333	6,892	57,940
Total <sup>3</sup>	Spain	4,423	37,985	5,482	55,650	5,140	49,600	4,431	43,724	4,112	36,886
	Portugal	2,345	19,027	2,429	23,742	2,444	23,043	2,375	21,411	2,596	18,849
	Total EU	7,090	59,339	8,578	85,182	8,192	78,137	7,196	67,972	7,118	59,128

Source Eurostat

<sup>1</sup> Classified with the code 3061350, comprises mainly the following species: Giant tiger prawn (*Penaeus monodon*), Kuruma prawn (*Penaeus japonicus*), Indian white prawn (*Penaeus indicus*) and Western king prawn (*Penaeus latisulcatus*), Brown shrimp (*Metapenaeus monoceros*), King shrimp (*Penaeus semisulcatus*).

<sup>2</sup> Classified with the code 3061380, understand mainly deepwater shrimp species (Gambas).

### 2.11.2.3 Imports of fishery products

Main fishery product imports to Mozambique are frozen horse mackerel with around an average 30,000 tonnes/year in the last years, which contributes significantly for food security purposes. In 2003 horse mackerel accounted for 32,000 tonnes. Imports from EU countries are low with the main commodity being canned fish (sardines and tuna) accounting for about 300 tonnes, as shown in Table 32

**Table 32: Fish Imports from EU**

	1999		2000		2001		2002		2003	
	t	€1000	t	€1000	t	€1000	t	€1000	t	€1000
Canned Products	136.8	350.2	119.7	231.4	71.2	216.1	131.5	369.4	137.8	215.7
Canned Sardines	45.1	84.3	71.7	111.6	39.4	92.2	63.3	144.6	43.4	48.1
Canned Tunas	79.7	245.7	48.0	118.4	31.8	123.9	68.2	224.8	94.4	167.6
Others (canned)	12	20.1		1.4						
Fish (frozen)	27.9	103.5	3.3	19.0	2.5	21.5	6.6	44.7		2.15

## 2.12 INSTITUTIONAL BASIS FOR FISHERIES

### 2.12.1 Ministry of Fisheries

Until 2000, the fishery sector was under the Ministry of Agriculture and Fisheries. The sector administration had a certain degree of autonomy within the Ministry, organised as a State Secretary of Fishery (*Secretaria de Estado das Pescas*, SEP) from 1978 until 1996, when SEP was dissolved and fisheries matters became the responsibility of the Ministry of Agriculture and Fisheries.

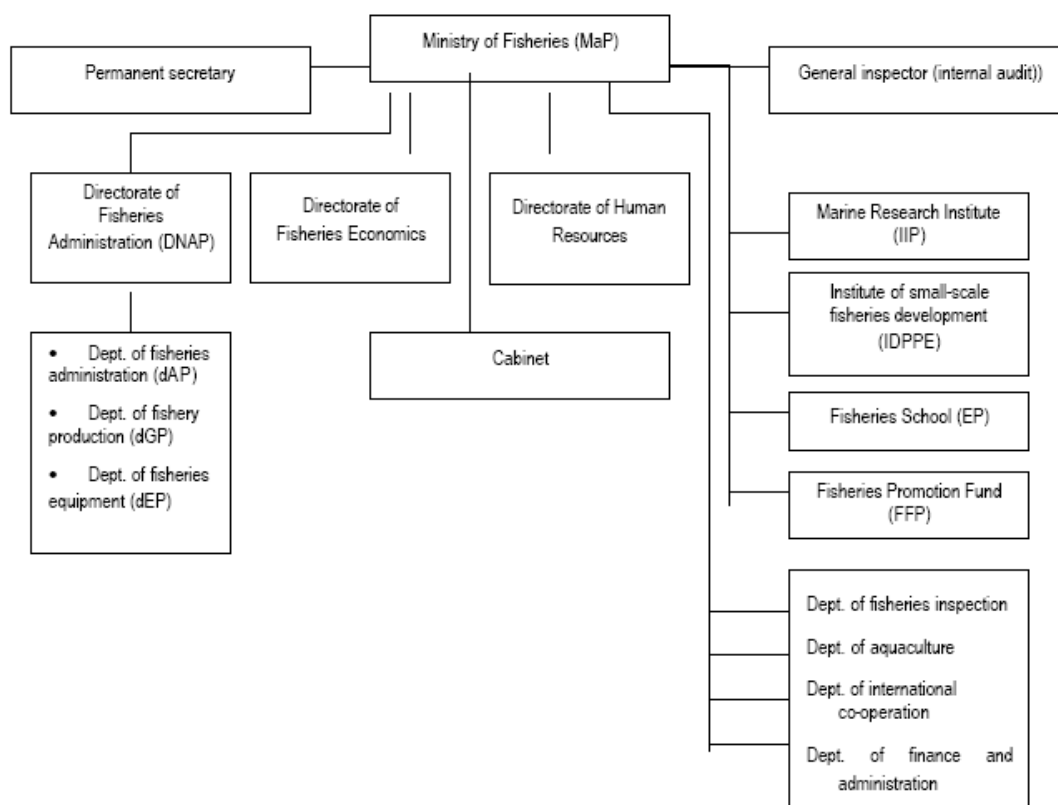
The competences of the Ministry of Fisheries, which was created in 2000<sup>24</sup>, are defined under Presidential Decree 6/2000 and include *inter alia* the power to coordinate, promote and develop monitoring and surveillance of the fisheries resources and the power to enact specific legislation to regulate the fisheries sector. This was the beginning of a reconstruction of the governmental fishery sector. The new organisational structure<sup>25</sup> (shown in Figure 13) reflects that higher priority given by the GoM to the fisheries sector, and awareness of the need for improvement in the structural organisation of the sector.

In 2001 the Statutes of the Ministry were approved<sup>26</sup> under which the competences of the different bodies are defined. The MoF is organised in three Directorates, three departments, three institutes and a financial body. The Directorates cover fisheries administration, fisheries economics and human resources, while the three departments cover, aquaculture, international co-operation, and finance and administration. The complete structure includes a Ministry Cabinet and a General Inspector (auditor). Regional activities (of quality control, inspection and data collection) are covered by Provincial Directorates established in the five coastal provinces with extensive fishing activities. In the other provinces the Ministry delegates authority to the Provincial Government. The structure can be summarised as follows:

<sup>24</sup> Presidential Decree 1/2000 from 17.01 extinguishes the Ministry of Agriculture and Fisheries and creates the Ministry of Fisheries.

<sup>25</sup> By respectively Ministerial Decisions 55/2000 from 07.06 and 177/2001 from 28.11.

<sup>26</sup> Ministerial Decision 75/2001 from 09.05.



Source: DNAP

Note: The Department of Fisheries inspection has turned into the National Institute of Fish Inspection (INIP) in 2005.

**Figure 13: Organogram of the Ministry of Fisheries**

The Ministry of Fisheries and all of its umbrella institutions comprise a total staff of about 1500, with 85% male, as shown in Table 33. About 10% of the staff have completed higher education. The Ministry of Fisheries itself (comprising DNAP, DNEP, AD and also INIP) have 109 staff, of which 34% have completed higher education. The Fisheries Research Institute (IIP) has a total of 119 staff, of which 29% have completed higher education.



Table 33: Higher education qualifications of the persons employed by the Ministry of Fisheries and all of its umbrella institutions

Academic Level	M.Pescas <sup>1</sup>			F.school			FFP			IDPPE			IIP			Provinces			Total		
	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T
PhD	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	0	2
Master	5	2	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	7	2	9
Licenciado	14	11	25	1	0	1	6	1	7	16	6	22	20	13	33	9	12	21	68	43	111
Bacharel	2	2	4	4	1	5	4	0	4	3	4	7	0	0	0	0	0	0	15	7	22
Medium	16	10	26	17	2	19	6	4	10	43	23	66	18	7	25	22	5	27	145	57	202
Basic	4	4	8	3	3	6	13	8	21	67	15	82	53	7	60	12	3	15	186	42	228
Elementar	22	16	38	24	5	29	21	6	27	65	16	81	0	0	0	59	12	71	856	68	924
Total	64	45	109	49	11	60	50	19	69	194	64	258	92	27	119	104	32	136	1279	219	1498

Source: Human Resources Department of Ministry of Fisheries

<sup>1</sup> includes INIP staff

The main department and institutional divisions are described in the following paragraphs.

### *2.12.2 Directorate of Fisheries Administration*

**Directorate of Fisheries Administration DNAP** is in charge of inter alia: licensing fishing activities and related activities; organise and keep an up-to-date register of all the companies and vessels; register and assess the data related to catches based on which it shall propose fisheries management measures; propose the distribution of TAC within the different fisheries; control the fishing activities of national vessels within and beyond Mozambican waters; coordinate monitoring and surveillance activities and promote the enforcement procedures, determine the applicable sanctions and collect the fines (Art. 2). DNAP also deals with fishery statistics, but this is done under difficult conditions with limited staff and limited capacity concerning computer technology and statistical skills. Logbook data from the industrial and semi-industrial vessels are submitted in 10-day intervals, but the DNAP can only cope with aggregated data. Although, the agreement is that the Fisheries Research Institute (IIP) should handle the raw data, this institute also has difficulty in coping. Thus, there is no central statistical function with associated tasks of compiling, processing, verification, and data quality control. This situation underscores the urgent need to reinforce database management and support as well as the need for a formal statistical unit with trained staff.

### *2.12.3 Commission for Fisheries Administration*

**CAP – Comissão de Administração Pesqueira** (Commission for Fisheries Administration) is a forum for participative management which was regulated in 2002<sup>27</sup>. This was defined under decree 06/2000 as a national level body, bringing together administration, research, and industry associations. It is presided by the Director of DNAP and composed by representatives from different departments, institutes and ship owners associations. These include one representative from the Fisheries Administration Department, Fisheries Research Institute, National Institute for Artisanal Fisheries Development; Directorate of Fisheries Economy, International Cooperation Department; Fisheries Product Inspection Department, two representatives from the industrial and semi-industrial ship-owners association, and four representatives from the artisanal fisheries association. CAP is responsible for advising on inter alia the following matters: preparation and review of fisheries development plans; TAC, closed season and restricted fishing areas; maximum number of fishing vessels licensed by fishery; and any fisheries management areas. It shall meet every three months (REPMAR, Art. 16). It functions as co-management committee at national level. However, the Minister is not obliged to incorporate recommendations provided by either of these fora in the decision-making process.

### *2.12.4 Stakeholder participation*

Policy of the GoM is to pursue co-management principles and there are three main organisations through which stakeholder participation is ensured.

**CCG - co-management committees** - **Comité de Co-gestão de Pesca** : These provide for a for local, district and provincial participative management. Includes: local fisheries, representatives of: Conselhos Comunitários de Pesca, vessels owners, research, fisheries extensionists, local maritime authority, local processors and fish mongers.

**CCP – community fisheries councils**, **Conselho Comunitário de Pesca**: these are locally organized on request of the entitled stakeholders, and are authorized by the Minister of Fisheries to develop activities relating participative management.

**CC Consultative council: the Consultative Council (CC)** also known as Council of Fisheries, established under the 2000 decree. It is comprised of Ministerial advisers and all the representatives in CAP. It answers directly to the Ministry of Fisheries and meetings are once or twice a year, dedicated

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<sup>27</sup> Decree 47/2002 from 10.04.

for overall sector discussion, policy formation, annual analysis of the sector, giving advice to the Minister.

#### *2.12.5 Fisheries Research Institute*

**IIP- Fisheries Research Institute** is responsible for fisheries research in relation to fisheries resources and biological aspects. Operates as a classical fisheries research institute with its focus on biological aspects of management.

#### *2.12.6 Small Scale Fisheries Development Institute*

**IDPPE - Small Scale Fisheries Development Institute:** The Institute for Small-Scale Fisheries Development (IDPPE) was created with the specific objective of promoting development in the artisanal fisher communities, including aspects relating to socio-economic conditions, fishing technology and related activities. It has been of particular importance in the implementation of policy on co-management.

It is responsible for the development programmes directed at the small scale sector. It undertakes studies and promotes activities in relation to the socio-economics of artisanal fisheries, artisanal technologies (fishing gear, boats and engines, fish processing and marketing). Implements Census surveys, systematic frame surveys and more specific socio-economic baseline studies of artisanal fishery in all provinces and provides basic information about the artisanal fisheries. Implements statistical collection system for artisanal fisheries.

Since the early 1990s, IDPPE has, with very limited resources, developed and implemented systematic frame surveys and more specific socio-economic baseline studies of artisanal fishery in all provinces and provided basic information about the artisanal fisheries. This contributed to putting the artisanal fisheries on the agenda and fed into the formulation of the fisheries Master Plan and overall legislation.

#### *2.12.7 National Directorate of Fishery Economics*

**DNEP National Directorate of Fishery Economics:** has responsibility for Economical sector analysis, planning and statistics, Computers and Information (includes library and publications). DNEP is responsible for annual reports (integrating information and secondary data from all departments and institutions within the fisheries; collecting, compiling and processing of statistics from all departments), inter-communication and information exchange between departments and to other ministries (INE, Finances, etc); Approval, evaluation and monitoring of public and private projects; Sector studies and policy.

##### *2.12.7.1 Fisheries Development Fund*

**FFP Fisheries Development Fund** The Fisheries Law foresees the establishment of a National Fund for the Promotion of Fisheries (Art. 10). FFP was subsequently formed by Ministerial Decision in 2003 according to which:

*"FFP is a public entity with legal personality and financial and administrative autonomy under the supervision of the Ministry of Fisheries" (Art. 1°).*

The FL foresees that FFP be set up to promote artisanal fisheries, including artisanal naval construction and commercialisation of artisanal fish products, as well as to support industrial fishing of non-exploited resources and the renewal and expansion of semi-industrial fishing fleets. The Board of Administration is presided over by a representative from the Ministry of Fisheries.

The Fisheries Development Fund (FFP) was therefore established in 1988 to coordinate donor funds and manage public sector budgets, including the reallocation of part of the license income (50%) from the fishery back into fisheries related activities. In 1996 FFPs mandate was furthermore widened to allow for a more active role in credit operations partially funded through licence income (50% of license incomes are allocated to FFP). FFPs experience in credit delivery is mainly related to leasing

based privatization of government property in the fisheries sector and emergency aid related subsidized schemes, with a problematic recovery performance (about 50%).

The objective of the FFP is to “give financial support to actions aiming at stimulating private investment, in particular national, in areas considered priority within the context of the objectives of the fishing policy and the implementation strategy thereof. It is also charged with ensuring:

- the management and control of revenue from license fees and funds made available to the sector by international agencies as donations and external funding. Including the resources aimed at encouraging private investment.
- the distribution of part of the revenue generated, among the various fisheries public administration bodies to finance recurrent costs.
- the budgeting and financial execution of public investment programmes.

In effect the FFP represents the financial agency within the Ministry of Fisheries responsible for financial management of development activities. The FFP receives national and international funds for fisheries and undertakes payments to the different departments, institutions or public/private projects in fisheries. It gives financial support for actions stimulating private investment, research programmes and projects, experimental projects, MCS activities and others dependent of Ministry of Fisheries. It is supported by an administrative fee ("Fundo de Bónus de Rendibilidade") of 5% levied on such transfers.

FFP will manage the funds related to various upcoming major artisanal fisheries development projects with credit components including the Artisanal Fisheries Development Project financed through ADB in Cabo Delgado in the far north, Sofala Bank Artisanal Fisheries Project funded through IFAD in the northern and central region and Support to Rehabilitation of Fisherfolk affected by Floods in the central and southern region funded through FAO. FFP's strategy for credit to the private sector is to stimulate private investments, especially national investments, in areas of priority in the government policy including the artisanal fisheries, land based infrastructure (ice production, cooling and processing facilities) and for the industrial fisheries to exploit non- or under exploited resources.

#### 2.12.7.2 *Fisheries School*

The **Fisheries School (EP)** provides vocational training for fishermen.

## 2.13 FISHERIES POLICY FRAMEWORK

### 2.13.1 *Policy formation*

There is no clear single statement of fisheries policy, or any well defined mechanisms for policy formation.

In general policy is expressed in the Fisheries Master Plan, developed with technical assistance from DANIDA, and adopted in 1996. Since then Presidential Decree 06/2000, by which the responsibilities of the new Ministry of Fishery were defined has also re-stated fishery sector objectives. Most recently policy measures have been guided by the Development Plan for the Fisheries Sector, 2002-2006, developed with NORAD assistance as a means of guiding donor interventions from this source. These documents are considered in more detail in the following sections.

However, the institutional capacity for policy formulation remains weak. At the establishment of the MoF in 2000, the then *National Directorate of Fisheries* was disconnected with its existing structures from the MADER (Ministry of Agriculture and Rural Development). This implies that not all functions of an independent Ministry were in place at the formation of the new ministry. The lack of definition within the law of a clear policy formation process has meant that this condition has persisted. Autonomous public entities within the MoF have developed a strong autonomy in terms of

operations and donor linkages. Public intervention is to a higher degree carried out through regulation, than public funding of services.

### 2.13.2 *Fisheries Master Plan*

A Fisheries Master Plan was formulated in the mid 90's and adopted in 1996 in order to define policy goals and strategies in order to achieve these goals. There are three major development objectives stated for the fisheries sector:

- Improvement of the domestic supply of fish in order to make up for a part of the country's food deficit.
- Increase the net foreign exchange earnings of the sector.
- Raise the standard of living of the fishing communities.

The Master Plan addresses sustainability *"the State is responsible for ensuring that the fishing activities do not threaten the long term sustainability of the natural resources and that the benefits reaped from these activities for the fishing communities and for the country, as a whole, are maximised."* And defines the private sector as the principal contributor towards the improvement of the national economy. The Plan also set out the policy that *"revenue from the sale of fishing licences and collection of fees for services rendered by public bodies in the sector should cover the global recurrent expenses of the fisheries public administration bodies"*, thus essentially requiring the administration of the fishery sector to be self-financing.

The Master Plan describes strategies at a detailed level for each sub-sector and these strategies have associated activities. The strategies on intermediate level are implicit in the detailed strategies and can be understood to include:

- Increasing the standard of living of the fishing communities by prioritising sub-sectors that contribute to jobs on land and in the fishing fleet. As a part of this, also replacing expatriate staff in the fishing industry – mainly crew members on fishing vessels – with Mozambican nationals, either directly or through fleet replacement. The emphasis on the semi-industrial fleet is the main mechanism to pursue this strategy.
- Making the fishing administration (the Ministry and its associated institutions) financially sustainable on basis of fees from the industry and setting aside a fixed percentage of the primary value of fisheries products to finance the activities of the administration. The principle of fixing the public budget relative to the economy of the sector should also create incentives to care for the economic well-being of the sector.
- To ensure contribution from the fisheries sector to the national economy by developing a fee system.

The intention with the Master Plan was to reduce the industrial shrimp trawler fleet, support the development of a semi-industrial ice-trawler fleet, and upgrade onshore processing plants (quality improvement) in the Sofala Province, in particular. The ice-trawlers should land both shrimps and by-catches for further processing onshore. This strategy was intended to contribute to the fulfilment of the overall objectives, although indirectly. The focus on the semi-industrial ice-trawler concept was seen as a means to increase landings of by-catch and thereby enhance the supply of fish for the domestic (rural) market. The policy also foresaw the upgrading of onshore processing should enable export to the lucrative EU market, and hereby increase foreign exchange earnings. The focus priority given to develop the ice-trawler concept was seen as a means to ensure a "nationalisation" of the shallow-water shrimp fishery both in terms of employment and ownership in the fleet and in the processing industry. The strategy of the ice-trawler concept was however undermined, because the distinction between semi-industrial and industrial trawlers was based on a length criterion without considering the type and amount of onboard equipment (e.g. freezers). From 1997 semi-industrial trawlers were allowed to have freezers on board. The 28 vessels introduced under this regime had

catch capacities comparable to industrial trawlers and they did not contribute raw material to onshore processing. They constituted a *de facto* expansion of the industrial fleet, and undermined a central concept of the Master Plan.

The expansion of the industrial fleet with new, smaller industrial vessels made it even more difficult to reduce the fishing quotas in the shallow-water shrimp fishery. Therefore, due to a lack of implementation capacity, and in the name of developing the local semi-industrial sector, the industrial fishing capacity has increased, adding to the problems of managing the already heavily exploited shrimp stocks.

Tuna and pelagic fisheries are largely ignored in the Master Plan except that the plan:

- maintains the policy of selling industrial tuna fishing licenses to foreign vessels as long as national entrepreneurs do not have their own means of production;
- prohibits tuna fishing with drift gill nets;
- allows industrial fishing aimed at small pelagic species exclusively outside of the shrimp fishing zones.

The Fisheries master Plan also considered the finance of the public sector fisheries administration and indicated that strategy would be based on:

- efforts to finance public investment through donors and subsidized credit.
- from 1996 revenue from the sale of fishing licenses and collection of fees for services rendered by public bodies in the sector should cover the global recurrent expenses of the fisheries public administration bodies.

This approach has made the fishing administration (the Ministry and its associated institutions) financially independent of Government.

### **2.13.3 Presidential Decree 06/2000**

The Presidential Decree (Decree 06/2000) by which the responsibilities of the new Ministry of Fishery were defined in 2000, expresses the overall policy objectives for the sector, which are:

- a) Secure a responsible harvest production, to protect and conserve the fish resources, among others set up a dynamic co-management.
- b) Secure production and conservation of the marine resources and a sustainable exploitation of the fish resources.
- c) Promote and develop the quality of fishing activities and connected operations.
- d) Promote and develop fish production within the Mozambican water jurisdiction, both directed towards domestic consumption and export.
- e) Promote increased competence in the sector as to improve the standard of living in fishing communities.

### **2.13.4 Development Plan for the Fisheries Sector, 2002-2006**

The “Development Plan for the Fisheries Sector, 2002-2006” has been the guiding document in recent years. This was elaborated on the strategy of the Fisheries Master Plan, using a logical framework approach and cost estimates. The plan was developed with technical assistance from Government of Norway, and is intended to utilize the NORAD cooperation program. The Plan comprises six intervention components with the following expected results:

<b>Sector</b>	<b>Expected result</b>
• Artisanal fisheries;	Increased revenues for the fishers.

- Semi-industrial fisheries; Increase in participation and production.
- Industrial fisheries; Increase economic contribution to the country.
- Processing industry; Improve processing capacity on land.
- Aquaculture; Increase production capacity.
- Public administration; Improve efficiency

The revision of the Fisheries Master Plan has been an issue on the agenda in recent years. This was expected to take place with the assistance of FAO or the EU, under the 8th EDF, but this has not materialised. The recently approved fisheries programme for the period 2005-2008, funded by NORAD, includes its revision as a specific objective, and work on this is expected to take place in the near future. Key elements for inclusion in the new policy framework will be the introduction of fisheries management plans for each major fishery and an aquaculture development strategy.

#### *2.13.5 The fisheries legislation*

The Fisheries Legislation is composed mainly of the Fisheries Law from 1990<sup>28</sup> (FL) and the General Regulation from 2003<sup>29</sup> (REPMAR). It also comprises several specific legal instruments dealing with policy and institutional issues and establishing specific management measures namely with regard to shrimp, fishing zones, mesh sizes and prohibition of certain activities.

The FL establishes the public domain over the fishing resources found in waters under Mozambican jurisdiction and that the State is responsible for regulating the conditions of their use and exploitation (Art. 4). Fisheries management plans are to be prepared by the Ministry of Fisheries and adopted by the Council of Ministers (FL, Art. 8). They shall include, namely, the objectives to be promoted, the management measures and policies to be adopted and an identification of the fisheries, their respective fishing size and status (REPMAR, Art. 6). The elaboration of these plans is based in a wide consultation process (REPMAR, Art. 7) but to date no fisheries management plans were adopted.

Furthermore the FL is outdated and not in compliance with many of the international and regional commitments that Mozambique has taken after 1990. A new FL is required, but the political will required to promulgate this has been lacking. Despite the lack of political will to update the framework law, a new regulation was adopted in 2003 repealing the previous one from 1996. This regulation (REPMAR) is a modern piece of legislation that regulates a law adopted 13 years previously, but which in many aspects has become obsolete and not enforceable.

#### *2.13.6 Fisheries and poverty reduction*

Fisheries is considered an important sector in the struggle against poverty and the promotion of economic growth, particularly given the large involvement of small-scale producers. The sector is considered to have potential to expand in both the domestic and foreign markets, with the participation of both the small and large-scale sub-sectors. The PRSP defines a number of concrete actions in the fisheries sector. These are shown in Table 34 .

**Table 34: Poverty reduction strategy; fisheries elements**

<sup>28</sup> Law 3/90 from 27.09.

<sup>29</sup> Decree 43/2003 from 10.12.

PRSP Element	Measures
Support to traditional fishing	<p>Improve use of marketable surplus from traditional fishing; raise the quantity and quality of production and income derived from traditional fishing.</p> <p>Principal measures to be undertaken: Build and put into operation infrastructure to support traditional fishing in 4/5 fishing centres to be established in 3/4 provinces to be identified: (a) carry out studies/projects for these centres; (b) mobilise resources and begin to implement the project.</p>
Support to Large-scale national producers	<p>Increase the participation of national operators in large-scale fishing.</p> <p>Principal measures to be undertaken: Transfer to private Mozambican citizens the State's stake in fishing companies; pursue an analysis and take consequent measures on the issue of using of foreign fishing fleets.</p>
Support to aquaculture	<p>Bring about structural reform of the sector, stimulating aquaculture involving national operators and other large-scale operators. Principal measures to be undertaken: Promote private investment to develop aquaculture; conceive a programme for developing aquaculture, including the mobilisation of financing from the local private sector, and initiate its implementation:(a) carry out studies and projects; and (b) mobilise resources and begin implementation of the project.</p>
Training of the labour force	<p>To increase the supply of qualified labour in the sector.</p> <p>Principal measures to be undertaken: Rehabilitate and modernise the Fisheries School in Matola: (a) develop a project (b) mobilise the necessary resources and begin implementation; develop projects for opening training centres in the areas with the greatest concentration of fishing activities.</p>
Protection of maritime borders and inspection of activities at sea (integrated in good governance strategy).	<p>Protection of natural resources through the control of frontiers; inspection of activities at sea to enforce contracts and regulations and prevent the depletion of resources and degradation of the environment.</p> <p>Principal measures to be undertaken:</p> <p>Establish an effective system to protect and inspect maritime waters and activities.</p> <p>Establish an effective border guard system (re-equip and mobilise the border guards).</p>

## 2.14 FISHERIES SECTOR FINANCE AND BUDGETS

### 2.14.1 Finance of fisheries activities

The Fisheries Master plan of 1996 provided for the fishery sector to be self-financing. The State budget finances some recurrent expenditure of the Ministry of Fisheries and its institutions,



such as salaries. All other finances are managed via the sectoral income, and channelled by the FFP.

FFP receives four categories of revenue from different sources:

- “*Receitas consignadas*”:
  - 50% of fishing licences from industrial and semi-industrial fisheries
  - 50% of tuna fishing receipts;
  - 100% of services fees provided by public institutions in fisheries sector (e.g. inspection)
  - 100% of fines
  - Some % on financial results in participated fishing firms
- National budget (OGE): funds from Ministry of Finances to finance development projects according to the Triennial Public Investment Plan (PTIP). In 2004 20 projects were financed or co-financed by OGE.
- External Funds from bilateral donors (NORAD, ICEID) and Compensation Funds from EU. In 2004 5 projects were financed by UE and 3 programmes by NORAD and ICEID. One percentage (5%) is retained by FFP to cover operational costs.
- 100% of the compensation from the EU fisheries Agreement (see section 3.1) for targeted action funding.

FFP annual income for 2004 (equivalent to €5,259,721) is shown in Table 35.

Table 35: FFP Income 2004

Revenue category	Item	Amount Euro
1. "Receitas consignadas"		
	1. 1. Industrial fisheries	1,237,902
	1.1.1. Fishing licences	1,225,878
	1.1.2. Fines	12,024.
	1.2. Semi-industrial fisheries	230,469
	1.2.1. Nampula	3,313
	1.2.2. Tete	37,770
	1.2.3. Zambézia	39,644
	1.2.4. Sofala	88,321
	1.2.5. Inhambane	19,731
	1.2.6. Maputo	41,687
	1.3. Tuna fishing	400,590
	1.4. Fish inspection	28,598
	Sub-total	1,897,560
2. Public budget		315,090
3. External funds (1)		
	3.1. NORAD	906,537
	3.2. ICEIDA	134,147
	3.3. EU Fisheries Agreement (target actions)	2,006,384
	3.3.1. PES/012 Quality control	95,632
	3.3.2. PES/96/015 Research	877,251
	3.3.3. PES/02/005 Institutional development of MoF	781,219
	3.3.4. PES/04/006 MCS	247,060
	3.3.5. PES/04/005 Training support for the MoF	5,220
	Sub-total	3,047,070
<b>TOTAL</b>		<b>5,259,721</b>

Source: FFP

(1) Execution

#### 2.14.2 Fees charged to the sector

Subsistence fisheries are exempt from fees. Annual licence fees in the artisanal fisheries vary depending on species, gears, type of vessel (e.g. engine or not) and province. The industrial fishery is licensed and fees are related to size of quota. There is no tax on any measure of effort, such as fishing days, trawling hours etc. The fees charged to the sector in 2004 are shown in Table 36.

**Table 36: Total external Fisheries Sector Revenues (2004)**

<b>Revenue</b>	<b>Amount Euros</b>
Fishing licences (Industrial fisheries)	2,434,315
Fishing licences (semi-industrial fisheries)	500,422
Fishing licences (artisanal fisheries)	39,680
Fishing licences (sport fisheries)	6,896
Fishing licences (previous years)	74,302
Royalties (tuna licences)	847,145
Inspection fees	59,375
Fines	27,054
Compensation funds	3,606,753
<b>TOTAL</b>	<b>7,595,946</b>

Source: DNEP

TERN (Tax on Exploitation of Natural Resources) was a regime for additional public income applied to the two largest industrial companies - Efripel and Pescamar (being fishery sector joint ventures with foreign operators). It was introduced following the loss of government tax income from the industrial shrimp fishery on the elimination of export duties in the 90's (as a measure to stimulate other export industries). The companies did not pay license fees. Other companies were subject to profit tax. TERN receipts were more than US\$3.5 million in TERN in 1999 and US\$0.15 million in 2003. TERN was ended in 2004. The situation was normalised in 2004 when the regime of the two companies became the same as for the others. Recent information (DNEP, Relatório do Balanço Geral de Actividades, 2004) indicates that the two companies now pay the normal license fees.

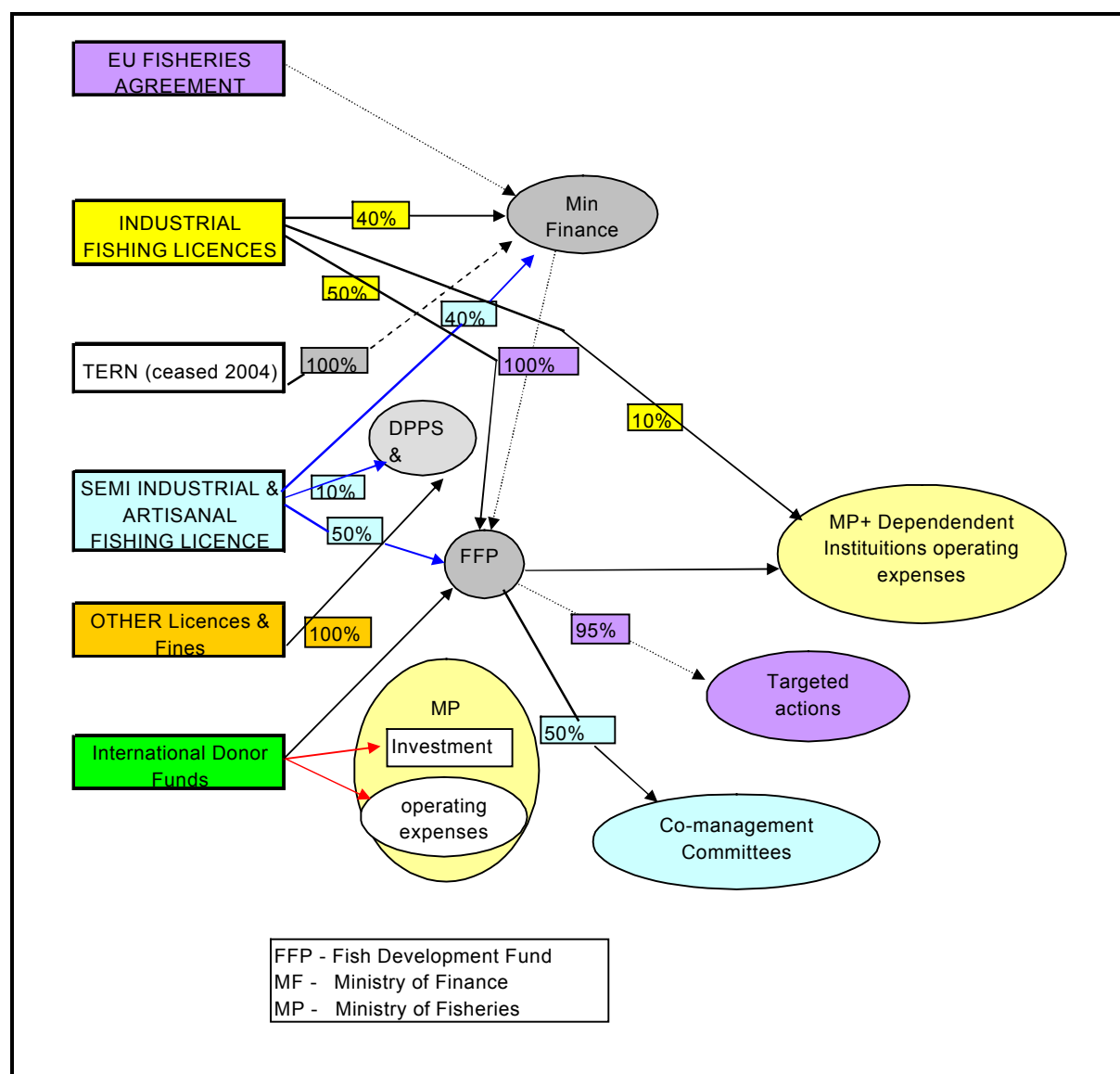
#### *2.14.3 System of financial transfers*

Disbursement to the various operational accounts, projects and investments is managed by the FFP. The FFP is responsible for the distribution of the external revenue generated by fisheries activities, the management and control of funds made available to the sector by international agencies as donations and external funding and the budgeting and financial execution of public investment programmes. According to a review by the Norwegian College of Fishery Science<sup>30</sup>, "FFP is not viewed as a constitutionally defined public entity, which gives room for individual decisions on salaries and other expenditure".

The system of financial transfers applied is shown in Figure 14. All external sources of income (licence fees, fines etc) including Fisheries Agreement compensation are received by the Treasury. Depending on the source, the funds are then transferred to the Ministry of Fisheries directly (for investment or operating expenses), or via the Fisheries Development Fund (FFP). Compensation funds from EU are also controlled by Treasury and transferred to FFP.

In general the governmental income from licence fees are distributed with 40% retained by the state, 50% by the Fisheries Promotion Fund (FFP) and 10% to the organisation issuing the licence (usually the Ministry of Fisheries).

<sup>30</sup> "Continued cooperation between Mozambique and Norway in Fisheries Development" Norwegian College of Fishery Science, June 2004)



**Figure 14: Public sector financial flows associated with Mozambique fishery sector;**

Source: Tenreiro de Almeida A Observância da Lei e Regulamentação Pesqueiras em Moçambique, 2004, and consultants interviews

## 2.15 FISHERIES MANAGEMENT CAPACITY

### 2.15.1 Scientific Framework for Stock Assessment

#### 2.15.1.1 Organisation of fisheries research

Within the umbrella of the Ministry of Fisheries, IIP and IDPPE are responsible for fisheries research in relation to fisheries resources and biological aspects (IIP) and the socio-economics of artisanal fisheries (IDPPE).

IIP provides advice to the Ministry regarding the state of stocks and their exploitation. Data are collected from the industrial and semi-industrial fisheries and a sampling scheme for artisanal fisheries with frame surveys and regular catch-effort surveys has been initiated in cooperation with IDPPE. However, formal stock assessments and an annual TAC advice are produced for the shallow-

water shrimp only. Some of the assessments including the all-important shrimp assessment are made in cooperation with external consultants, which are used by IIP to provide a kind of external authorisation to the advice.

Catches in the artisanal sector are estimated are based on a recent national census in 2002 (IDPPE), covering the coastal areas, and the statistical sampling programme set up by the IIP. Great improvements have been made, but there are still deficiencies and problems of limited coverage that have to be addressed. Although the Ministry of Fisheries has the responsibility for the collection of statistics, the local representation of DNAP is not well developed and has limited capacity to undertake statistical tasks. The approach being used is to overcome these limitations through collaboration with the research institutions such as the Fisheries Research Institute (IIP) and Institute for Small Scale Fisheries Development (IDPPE).

#### *2.15.1.2 Fisheries Research Activities*

IIP operates as a classical fisheries research institute with its focus on biological aspects of management and performs very well within this paradigm and within the limited resources available.

The annual budget of the IIP has increased significantly in recent years from around 500,000 USD in 2003 to 1.3m USD in 2004 and 2005. Previously, 70% of the budget was needed to cover salaries and the State budget contributed with 40% of the annual budget. The financial situation of IPP has now improved substantially, but it is still dependent on external funding is needed to cover expenses such as salaries. NORAD has generally been a loyal contributor of about 30 % of the budget, but the situation in 2004 and 2005 is primarily the result of the financial compensation (targeted action for research) of the Agreement and to a lesser degree from NORAD assistance.

**Table 37: IIP budget given**

<b>Year</b>	<b>Budget Euro</b>
2000	704,058
2001	745,545
2002	735,787
2003	903,607
2004	1,326,950
2005	1,175,182

However, the Institute does not possess a research vessel, but several demersal and oceanographic research surveys have been undertaken in the context of cooperation with countries such as Norway, Iceland, the former Soviet Union, German Democratic Republic, Portugal and others. Nonetheless, annual shallow-water shrimp surveys have been carried out since 1991 (except 1996-1997) in collaboration with private fishing companies. The companies have provided a one of their fishing vessels for a fee to undertake the scientific surveys, typically during the closed season.

For a number of years IIP focused the research almost exclusively on the shrimp and certain other commercial species targeted primarily by the industrial and semi-industrial fleets, but over more recent years more attention is being paid to other species of interest for the artisanal fisheries sub-sector. There is furthermore a need to include other considerations in the advisory basis for fisheries management decisions - including environmental considerations as well as economic and social aspects and the validity of specific management measures in terms of implementation, acceptance and costs.

Nonetheless, data on the resources are – with the exception of shallow water shrimp – scarce and scattered. Species composition of the catches is poor, the emphasis being on commercial categories. Bycatch and discards appear to be important, but they are not considered in the statistics. Data on bycatch utilised by artisanal fishermen is limited. IIP has made efforts of collecting information concerning the industrial and semi-industrial fisheries by sampling in ports or through IIP observers. This includes information on the species composition of the catches, but there appears to be a lack of communication, as these are not presented in official fisheries statistics. Note that the responsibility for collecting, compiling and processing of statistics from the industrial and semi-industrial fisheries lies with the Fisheries Administration (DNAP). No formal unit dealing with all the tasks related to statistics exists, which indicates the difficult conditions under which these data are compiled and processed. IIP has likewise difficulties in coping with aspects such data processing and management.

Furthermore both IIP and IDPPE have a shortage of human capacity in terms of senior staff with academic training and experience in the subject area. IIP staff includes more than twenty with a university degree, but only three biologists with senior experience in IIP's core area - stock assessment - and another with senior experience in aquaculture. IDPPE is in a similar situation with insufficient expertise in economics and statistics and will also need strengthening within other disciplines to conduct social science research. Both institutions have lost trained staff to the private sector or to other government bodies. Both organizations also need training of staff at medium level.

#### 2.15.1.3 Fisheries statistics and catch reporting

In the case of the tuna and tuna-like species, the catches of foreign vessels are usually reported by species, but it was not until 1999 that this information was registered by species in the DNAP database due to technical limitations. As there is limited capacity concerning computer technology and statistical skills, the available data appear at times to be of questionable reliability, especially in terms of species composition. There are also limitations in terms of control and surveillance, as local ports are never used for landing or transshipment, which given the lack of an observer capacity, makes it particularly difficult to monitor the tuna fisheries operating in Mozambican waters. Thus, non-reporting of catches appears to be a significant problem, with no purse seiners reporting in 2003, and 25% of the surface longliners (as indicated in Table 38).

**Table 38: Number of purse seine and longline vessels licensed and number reporting catches in the Mozambican EEZ.**

Segment	status	No. of vessels						
		1997	1998	1999	2000	2001	2002	2003
Purse seine	licensed	43	46	54	30	28	26	34
	reporting	20	22	16	19	0	0	0
Surface Longline	licensed	36	59	37	42	51	45	38
	reporting	16	35	35	34	35	36	10

Source: DNAP from Stobberup et al. 2004

In addition a national census on artisanal fisheries was recently carried out by the IDPPE in 2002-2003, which is an essential source of information for statistical purposes. As referred, the IDPPE has also been involved in the projects covering the artisanal fisheries in various districts as well as in the formulation of a new statistical collection system.

### 2.15.2 *Fisheries MCS*

#### 2.15.2.1 *Means*

The MCS system in Mozambique is the responsibility of the Ministry of Fisheries under the Directorate of Fisheries Administration (DNAP). It is based on land-based control, involving 40 inspectors "fiscais" covering the whole coast through the provincial representations, and the possibility to let inspectors participate on trips of fishing vessels in the industrial fisheries. There is currently no means for covering sea operations, although the purchase of two small patrol vessels is being considered.

The MCS operations unit in the MoF does not function permanently and has in the recent past been set up temporarily to deal with specific operations.

A satellite-based vessel monitoring system (VMS) has been introduced. This has been partly implemented using an Inmarsat-C system through a contract with the company Bluetooth Ltd. 85 "blue box" units have been purchased and 73 have been installed in fishing vessels, mostly industrial vessels, but there are only around 10 vessels that are currently being monitored due to various technical problems (see section on MCS). The VMS system introduced has the potential of monitoring catch data, although further training is required to handle the equipment. However, there is a lack of a proper information system that can cope with such data. There appear to be a number of problems involved such as:

- Disputes with Bluetooth about service provisions and the stationing of a technician in Mozambique;
- The system introduced is somewhat complex, including the possibility of communicating catch data, and training is required to deal with the equipment;
- The MCS operations unit in the MoF does not function permanently and is temporarily set up to deal with operations;
- Lack of experience in dealing with technical issues concerning equipment and computer technology;
- Lack of a proper information system to cope with the data;
- Lack of "political" will to effectively use VMS (conflict of interests as important political figures have shareholdings in the major industrial shallow-water shrimp companies);

Concern the financial compensation of the Fisheries Agreement, there is a specific action targeting the "Strengthening of Surveillance and Control of Fishing Activities" with an annual budget allocation €266,191 for Maintenance and repair of MCS equipment; communications equipment and accessories. However budget execution has been limited to only 15% in 2004 (see Table 52).

#### 2.15.2.2 *Surface Surveillance*

Elements of MCS such as resource monitoring (particularly well developed for shrimp), licensing, quota monitoring, etc. are already operational. There is also a provision that inspectors participate as observers in the industrial fisheries. Fishing vessels are obliged to take fishery inspectors or observers onboard, if requested by DNAP. In practice, the capacity for control and surveillance is weak and the data provided by the inspectors and observers are considered biased. The current approach of chartering vessels for MCS operations also has its limitations including availability and leakage of information.

However, a major omission is the lack of any form of surface or air surveillance, both being without an appropriate budget line and without a patrol vessel. Thus, a decision has been taken to acquire/build two smaller patrol vessels. The smaller vessel ( $\approx 9$  m) is meant to cover coastal and estuarine areas where the semi-industrial fleet operates. The estimated cost is about 500,000 USD, although this is still under consultation with various shipyards (S. Africa) and it is to be paid for through the Agreement. The other vessel ( $\approx 20$  m) is meant to cover the Sofala Bank, in particular, to be financed through the NORAD fisheries programme, although its purchase is subject to the

preparation of ship management plan. At present the MoF does not have any experience with managing patrol vessels, and it is not clear how this will be addressed.

### 2.15.2.3 SADC MCS Project

Some recent progress has been made through the SADC Monitoring, Control and Surveillance of Fishing Activities Programme (SADC-MCS), since its start in 2000 and through to its completion in 2006 (March). This has been facilitated by a substantial contribution, through the Fisheries Agreement, to strengthen MCS activities (targeted action; annual contribution of €1M).

The main achievements in Mozambique are:

- implementation of several land, air and sea missions,
- positive interchange of information with other countries and partners regionally
- through the SADC Protocol on Fisheries
- trained inspectors<sup>31</sup>
- enhanced participation of other national partners in MCS activities such as the Navy, Marine Police and the private sector.
- development of legal instruments, economic studies
- preparation of an inspector's handbook, language cards and SOPs (standard operating procedures).
- Supply of surveillance kits and cars,
- Equipping of an IT training lab at the Fishery School.

The bilateral and trilateral surveillance operations carried out in cooperation with Tanzania and South Africa have been particularly successful<sup>32</sup>. These initiatives have broken ground in terms of institutional arrangements, planning, logistics, and the implementation of protocols on standard procedures. Such an approach of sharing resources and capabilities at the regional level appears to be a cost-effective solution for Mozambique<sup>33</sup>, but there is some debate over sovereignty issues such as the use of foreign vessels and inspectors in MCS activities. On a more practical level, these surveillance operations showed the need for a much stronger land-based support system and improved communications in Mozambique.

The project has also supplied equipment. The following items have been purchased since 2004 (including use of funds from the financial compensation of the Fisheries Agreement):

- 18 radios
- 14 GPS
- 18 cameras
- 9 binoculars
- 4 satellite telephones
- 31 computers/laptops
- 20 printers/plotters/scanners
- 10 vehicles (4WD)

Some of this equipment is for use by the operations unit and central capacity of the Ministry of Fisheries. At the provincial level, a total of 9 inspectors' kits were provided to assist in improving the monitoring of surveillance operations. The kit is composed of equipment such as a satellite phone,

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<sup>31</sup> There are 40 "fiscais" based in the provincial representations, covering the whole coast.

<sup>32</sup> Reports available from SADC-MCS ([www.mcs-sadc.org](http://www.mcs-sadc.org))

<sup>33</sup> The bilateral operation with South Africa, involving the vessel Eagle Star, was very profitable, rendering 666,000 USD in fines compared to a charter cost of 40,000 USD. Two foreign vessels were apprehended, which were licensed as tuna long-liners but were caught using gillnets for shark.



digital camera, hand held GPS and marine radio that enable inspectors to record observations, their location and communicate this to the delegations.

#### 2.15.2.4 MCS problems to be addressed

In spite of the assistance received, the perspective of the Mozambican authorities is that the project has not fulfilled its potential. There are still substantial weaknesses in fisheries control. The number of unlicensed vessels has been estimated to be about 21% in numbers and overall under-reporting of catches to be about 20%<sup>34</sup>. There is an extensive mis-reporting of catches, and difficulties are experienced in controlling the shrimp closed season; *gamba* vessels entering shrimp grounds and controlling beach seines.

The mid-term review<sup>35</sup>, in 2004, of the MCS-SADC programme identified many of these remaining problems:

- lack of sufficient and sustained training of MCS management staff and inspectors/observers;
- low remuneration of inspectors/observers;
- inability to carry out MCS functions on account of financing deficiencies;
- potential conflict of interests, involving the State, which may reduce political priority for the implementation of effective MCS systems;
- long coastline (2,770 km) difficult to police, poor communities and significant benefits from illegal activity
- weak of communication between relevant institutions
- no clear budget allocation for MCS or even a clear budget line within the MoF operations, despite MCS being considered to be a priority issue by the Ministry

## 2.16 ENVIRONMENTAL CONSIDERATIONS

### 2.16.1 Coastal and marine habitats

The coral reefs in Mozambique support a wide diversity of fish, crustacean and mollusc species, many of which are harvested by artisanal fishers. Corals are estimated to contribute to the production of 25-30 tons of fish per km<sup>2</sup>, thus, considering the 1290 km<sup>2</sup> of coral reef area in Mozambique waters, coral reefs can be responsible for up to 38,700 tons of fish each year<sup>36</sup>. Although corals are protected in Mozambique, which has prevented destructive activities like coral mining, the management and enforcement of the legislation is poor. Destructive fishing practices, e.g. the use of dynamite and spearfishing, have been used in coral reef areas, although not to the extent as in other east African countries. Intensive fishing and collection of marine invertebrates and sea cucumbers occurs daily within the seagrass beds, especially at spring tides. Ten species of holothuria are found in the shallow waters of Inhaca island, of which one is *Holothuria scraba*, exploited commercially and to an excessive level, with recurrent closures of the fishery.

Mangrove forests in Mozambique are heavily utilised for fuel wood and other building and domestic uses leading to massive depletion of these ecosystems. In the past 20 years, the average mangrove depletion rate for Mozambique was calculated to be about 4% with some areas like Maputo province having depletion rates in excess of 15%. The waters surrounding mangrove forests are very productive and support feeding and breeding grounds for many fish and crustaceans (prawns, lobsters, crabs) that are important fisheries of the country. Loss of mangroves thus contributes to declining fish catches and reduced productivity of the marine environment.

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<sup>34</sup> Marine Resource Assessment Group 2005

<sup>35</sup> Banks et al. 2004

<sup>36</sup> Hogue et al. 2002

Sea grass beds are found in all countries of East Africa, and the most extensive beds are around Bazaruto archipelago in Mozambique. They occur mostly in inter-tidal mud, sand flatland, sandy areas around the bases of shallow fringing and patch reefs, usually in shallow and calm waters. Sea grass beds act as an accretion mechanism for suspended sediments and help reduce particulate pollution. They provide shelter, food and nursery areas for some of the important and valuable species of fish (*Siganitis*, *Lethrinids*, *Lutjanids*, *Scarids*) shellfish, dugong (*Dugong dugong*) and the green turtle (*Chelonia medas*). But these beds are under threat from intensive use of bottom traps and beach seines, and from fishing with explosives. In relation to the possible effects of trawling and discarding on the benthic marine ecosystem, referring to the Sofala Bank in particular, there is a clear lack of information and it is not considered a priority on the research agenda.

The Dugong is found in Mozambique and is believed to be part of the last viable community in the whole eastern Africa. Dugongs are normally found in shallow, sheltered waters close to the coastline in bays and lagoons. There is only one species of dugong *Dugong dugong* with the largest population in Mozambique (Maputo bay, Inhambane bay and Bazaruto Archipelago). The last survey showed a population of around 70 individuals in Bazaruto Archipelago<sup>37</sup>.

### 2.16.2 *Direct environmental impacts of fishing*

Direct environmental impacts of the fishery relate to the high rates of bycatch and discards, and incidental catches of marine mammals, seabirds and turtles. The main issues are considered in the following paragraphs:

#### 2.16.2.1 *By-catch and discards*

Bycatch in the industrial and semi-industrial trawl fisheries is high, as the targeted shrimp constitute only between 1 and 20% of haul catches as determined by research surveys. Most of this bycatch, estimated at about 40,000 tonnes, is constituted by demersal fish species (49.6%), small pelagic species (48.6%) and demersal sharks/rays (1.8%). Some of this bycatch is being used by artisanal fishermen, which collect directly from the trawlers (around 8,000 tonnes). The Agreement does not however contribute with any impact, in terms of structure or functioning of the Sofala Bank ecosystem effects (e.g. changes in species assemblages, habitat modifications, over exploitation of specific species), as the agreement does not include shallow-water shrimp and the fishing possibilities for deep-water shrimp are not being utilised.

#### 2.16.2.2 *Interactions with turtles*

The five species of turtle found in the Indian Ocean occur also in Mozambique, where they use various habitats for feeding, growth, reproduction and nesting. These are the endangered Green Turtle (*Chelonia mydas*), Olive Ridley (*Lepidochelys olivacea*) Loggerhead Turtle (*Caretta caretta*), the critically endangered Hawksbill Turtle (*Eretmochelys imbricata*) and the Leatherback Turtle (*Dermochelys coriacea*). The most common are the hawksbill turtle and the green turtle and most of the breeding sites are in northern Mozambique. Globally, turtle population declines have been documented in specific nesting assemblages of the loggerhead in the Atlantic and Pacific as well as the green turtle in the eastern Pacific. Of particular concern is the leatherback, which is seriously declining throughout the Pacific and has experienced an overall decline in the Atlantic. Information concerning turtles in Mozambique is scarce, but there are indications that there is general downward trend in abundance due to a number of factors such as bycatch in various fisheries (trawl, longline, mechanised beach seines), habitat loss, and subsistence fisheries for their meat and eggs.

Bycatch of turtles appears to be a serious problem in the shallow-water shrimp fishery in Mozambique. This is estimated to be between 1,932 and 5,436 turtles caught annually as bycatch in

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<sup>37</sup> Hogue et al. 2002

trawl fishery<sup>38</sup>. Some are alive when the trawl is hauled; they may be killed for their meat. Turtle excluding devices (TEDs) have become obligatory in the shallow-water shrimp fishery as of 2006, but the implementation and enforcement of this regulation appears to be limited. Estimates from other fisheries are based on anecdotal evidence, but subsistence fishing would appear to be particularly important.

Furthermore all species of marine turtles are caught in longline gear. Many nations support large fleets or are expanding their longline fisheries. With regard to incidental capture in commercial and artisanal fisheries, the high level of capture in pelagic longline fisheries is of particular concern. The number of turtles caught annually in the U.S. longline fleets operating in the Atlantic and Pacific is estimated in the thousands<sup>39</sup>. Globally, total incidental captures is considered to be severely impacting marine turtle populations. There is very limited data for the Indian Ocean, but it is unlikely that the interaction does not take place in the region of the Mozambique EEZ.

#### 2.16.2.3 Interactions with marine mammals

Data on delphinid distribution and abundance are scant for Mozambique. However, in the waters of Mozambique and southern Madagascar, a minimum of 11 species have been reported<sup>40</sup>, including *Tursiops truncatus*, *Grampus griseus*, *Globicephala macrorhynchus*, *Stenella attenuata*, *S. longirostris*, *S. coeruleoalba*, *Peponocephala electra*, *Pseudorca crassidens*, *Sousa chinensis*, *Delphinus delphis* and *Steno bredanensis*. *Tursiops truncatus* and *Sousa chinensis* are known to inhabit both Maputo and Bazaruto Bays, hence interactions with artisanal and semi-industrial fisheries are possible.

Although the by-catch levels of purse seiners tend to be lower than long liners, their relative importance within EU effort requires a more detailed examination. In relation to marine mammals, there are no records of mammalian bycatch from industrial fisheries in the Mozambican EEZ, but these may have gone un-reported, as there have been no observer programmes to make direct observations. A study by Romanov (1998) reports that data collected by scientific observers on 108 sets on FAD-associated schools by Soviet / Russian / Liberian flag purse seiners in the WIO over the period 1986 to 1992 showed no cetacean by-catch and only one sea turtle. Based on purse seiners targeting yellowfin, bigeye and skipjack in the North Equatorial area (0-10°N, 45-70°E) of the WIO, observer data showed that various log associated pelagic species such as rainbow runner, triggerfish and dolphin fish represented the largest by-catch component (68% of the bycatch and 3.2% of the total catch), whilst sharks represent a quarter of the bycatch and 1.24 per cent of the total catch

#### 2.16.2.4 Interactions with seabirds

Concerning sensitive species of seabirds, there are no recorded interactions between seabirds and the industrial fisheries. In other regions, seabird bycatch in surface longline fisheries can be a problem, but this is usually in waters much further to the south. The Scientific Committee of the IOTC has noted that bycatch of seabirds is very low in the tropical areas of the Indian Ocean, but there is the potential of substantial seabird mortalities due to longline fishing in those areas of the Indian Ocean that overlap the distribution of breeding albatrosses (south of 30°S)<sup>41</sup>. Consequently, this is expected to be a minor problem in the Mozambican EEZ.

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<sup>38</sup> Louro et al. 2006

<sup>39</sup> Long and Schroeder 2004

<sup>40</sup> de Boer et al. 2004

<sup>41</sup> The IOTC has adopted the Recommendation 05/09 on incidental mortality of seabirds, which encourages Contracting Parties and Cooperating Non-Contracting Parties in supporting developing countries in their implementing their FAO International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries

### ***2.16.3 Ecosystem Impacts***

Bottom trawling is prevalent and high by-catch rates are reported. Discard rates in the shrimp fishery are known to be high. Impacts of discarding on the demersal benthos have not been studied in Mozambique, but are likely to be substantial as in many heavily trawled regions. These possible ecosystem effects of fishing have not been studied in Mozambique. However, some possible effects that would be expected in such cases are an increase in abundance of scavenger species (e.g. crabs), a degradation of the benthos habitat and lower biodiversity, a simplification of trophic foodwebs and thus a lower recycling of energy within the ecosystem.

In the case of oceanic ecosystems, this is poorly understood at present. The significant pressure on tuna stocks in the Indian Ocean are expected to have brought about change in terms of ecosystem structure and functioning, but there is a lack of historical baseline studies in order to be able to identify these changes. A recent study has shown that industrialised fisheries have typically reduced community biomass by 80 percent within 15 years of exploitation, considering a period of 50 years<sup>42</sup>. It is commonly accepted that fishing has been the main driving force behind the decline of tuna biomass, but the wider ecosystem effects have not been identified

## **2.17 INTERNATIONAL ASPECTS OF FISHERIES POLICY**

### ***2.17.1 National Donor-funded Projects***

#### ***2.17.1.1 National projects***

The Mozambique fishery sector is characterised by an extremely high level of donor activity across the full range of the fishery sector and government functions. Current projects operational in 2005 are shown in Table 39. Those planned for launch at a future date are shown in Table 40.

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<sup>42</sup> Myers, R.A., and Worm, B. 2003. Rapid worldwide depletion of predatory fish communities. *Nature*, 423: 280-283.

Table 39: Fishery sector projects in execution in 2005

Nr	Project/Program	Donor / Partner	Value Total (USD)	Period	Implementing institution
<b>Institutional Development</b>					
1	Information and Training Centre	ICEIDA (89%, grant) GoM (11%)	400,000 50,000 <u>450,000</u>	6 years 1999/2005	DNEP
2	Surveillance of fishing activity ( <i>Regional Project SADC</i> )	EC (grant)	2,000,000	6 years 2001/Mar06	DNAP
3	Fisheries SWIO ( <i>Regional Project, preparatory phase</i> )	GEF (grant)	<u>350,000</u>	3 years 2003/2005	IIP
4	Support for management of coastal resources in SWIO ( <i>Regional Project - SWIOFC</i> )	Sweden (AsDI, grant) Regional Governments	<u>764,709</u> 40,000 <sup>43</sup>	4 years 2005/2008	FAO
5	Modelling impact of flows from Incomáti river (proj Incomáti)	EC (grant)		2003/2005	IIP/UEM
6	Environmental Economic Accounts	IUCN (grant)		2005/206	DNEP

<sup>43</sup> The government contribution will be in kind and is estimated in 40,000 USD by beneficiary country.

Nr	Project/Program	Donor / Partner	Value Total (USD)	Period	Implementing institution
<b>Small-scale fisheries development</b>					
7	Artisanal fisheries in Sofala Bank	IFAD (59%, loan) Norway (19%, grant) BSF (11%, grant) GoM (10%) Beneficiaries (1%)	18,054,000 5,814,000 3,366,000 3,060,000 306,000 <u>30,600,000</u>	6 years 2002/2008 (until 2010)	IDPPE
8	Artisanal fisheries Northern Nampula and Cabo Delgado province	AfDB (77%, loan) AfDB (9%, grant) GoM (11%) Beneficiaries (3%)	17,848,000 2,185,000 2,530,000 690,000 <u>23,253,000</u>	6 years 2003/2009	IDPPE
9	Poverty Reduction through fisheries in the District of Moçimboa da Praia (Cabo Delgado). MoU signed in 26/05/2005	Canada (grant)	<u>589,367</u>	5 years 2005/2010	IDPPE
10	Artisanal Fisheries Development	Tailândia	n.a.	3 years 2005/2007	IDPPE
<b>Support for fish Inspection</b>					
11	Inspection and fish Quality Control	ICEIDA (67%, grant) GoM (33%)	469,000 231,000 <u>700,000</u>	2 years 2005/2006	INIP

Nr	Project/Program	Donor / Partner	Value Total (USD)	Period	Implementing institution
<b>Aquaculture development</b>					
12	Aquaculture development	French Cooperation	<u>202,000</u>	2 years 2004/2005	DAQUA
13	Developing National policy for aquaculture	Commonwealth Secretary (grant)	...	... months 2005	DAQUA
14	Aquaculture development	Thailand	n.d.	3 years 2005/2007	DAQUA
15	Development of artisanal pisciculture in Macanga and Tsangano (Angónia, Tete): Food security and mitigation through integrated activities of aquaculture and agriculture of Sub-Saharan Africa (joint project Moz / Malawi)	WorldFish Center OPEC	297,000 300,000 <u>597,000</u>	3 years 2005/2007	DAQUA
<b>Development of harbour infrastructures</b>					
14	Rehabilitation of Beira fishing harbour	BID (50%, loan) BADEA (41%, loan) GoM (9%)	9,867,500 8,091,350 1,776,150 <u>19,735,000</u>	4,5 years 2004/2009	DNEP

Source: MF

Table 40: New projects approved in 2005 or in negotiation

Nr	Project/Program	Potential Donor / / Partner	Value (USD)	Total	Period	Implementing institution
Institutional Development						
1	Continuing support to Mozambique Fisheries Sector (Triennial Program) <i>(New agreement signed in 1/07/2005)</i>	Norway (90%, grant) GoM (10%)	9,109,000 1,012,000 <u>10,121,000</u>	3 years 2006/2008	Minister 's Cabinet <i>(approved)</i>	
2	Purchase of 3 boats for surveillance and rescue	Spain (loans FAD and OECD)	<u>10,000,000</u> EUROS		DNAP (under negot.)	
Smallscale fisheries development						
3	Development of coastal fisheries in the provinces of Inhambane and Gaza	Italy (grant)	<u>3,790,776</u>	3 years	IDPPE <i>(approved)</i>	
4	Strengthening management and development of fisheries in Lake Niassa and Cabora Bassa Dam	TCP/FAO (don)	<u>400,000</u>	2 years	IDPPE (under negot.)	
5	Construction of infrastructures to support artisanal fisheries in Cabo Delgado, Nampula and Sofala	NEPAD (China, Japan)	<u>3,314,795</u>	5 years	IDPPE <i>(mobilize \$)</i>	
6	Construction of infrastructures to suport artisanal fisheries in Maputo Province	Japan (JICA)	...		IDPPE <i>(mobilize \$)</i>	
7	Support to artisanal fisheries in Maputo Province	ICEIDA (grant)			IDPPE (under negot.)	
8	Research and survey for development of fisheries in Massingir	AfDB			IDPPE (under negot.)	
9	Institutional capacity IDPPE	SKI			IDPPE (under negot.)	
Aquaculture development						
10	Upgrade production of small scale pisciculture	NEPAD	<u>13,400,000</u>	12 years	DAQUA <i>(mobilize \$)</i>	
11	Development of Pisciculture in the Provinces of Manica and Zambézia	DFID (grant)	...	...	DAQUA	



Nr	Project/Program	Potential Donor / / Partner	Value (USD)	Total	Period	Implementing institution
<b>Support for fish inspection</b>						
12	Support fish inspection in Nampula	ICEIDA (grant)	<i>No info</i>			INIP (in negoc.)
13	Auto-evaluation of national system for fish inspection (consultancy)	EC	<i>No info</i>			INIP (in negoc.)
14	Capacity building and laboratory equipment	UNDP				INIP (in negoc.)
<b>Development of harbour infrastructures</b>						
15	Rehabilitation of fishing Port in Angoche	BADEA (loan)	No info			DNEP (em negoc.)
16	Rehabilitation of Industrial wharf of fishery port of Maputo (phase III)	Japan (grant) (JICA)	<u>5,784,221</u>			PPM ( <i>em negoc.</i> )
17	Construction of wharf aside dry dock in Quelimane	Japan (grant) (JICA)	<i>No info</i>			FFP (em negoc.)

Source: MoFisheries

## Acronyms:

BADEA	Arab Bank for Economic Development in Africa
BSF	Belgium Survival Fund
DFID	Department for International Development, UK
FAD	Fondo de Ayuda al Desarrollo (Spanish Cooperation)
GEF	Global Environmental Facility, WB
IDB (BID)	Inter-American Development Bank
JICA	Japan International Cooperation Agency
MoU	Memorandum of Understanding
PPM	Maputo Fishing Port
SKI	UK NGO

International cooperation in the fisheries sector includes NORAD, EU, DFID, ICEIDA, ADB, French cooperation, Spanish Cooperation, OPEC and Irish Cooperation. The activities are mainly in relation to institutional development in the government sector, support to development of export capacity (through quality control development and infrastructure) and technological development in the artisanal sector. A range of national and international NGOs are also active in the sector, mainly in relation to the artisanal sub-sector with emphasis on micro credit.

Support to the artisanal sector has been in the form of micro credit (the GoM/IFAD/OPEC NAFFP project, Italian and Irish assistance) and institutional capacity development in the government sector (NORAD support to IIP and DNAP, Italian support to the Fisheries School, French support to IDPPE, and DANIDA support to development of quality control systems and DNP). Japan has provided support to infrastructure, mainly port rehabilitation. The recent emphasis on artisanal fisheries development is a change relative to the earlier balance of assistance, which mainly focused on capacity development and restructuring in the public sector.

**DANIDA cooperation in Fisheries** was suspended in 2000 due to the fact that Ministry of Fisheries did not accept the development strategy defined by DANIDA advisers. DANIDA wanted a real decrease of fishing effort for shallow water shrimp, with a reduction of licensed vessels. The Ministry of Fisheries did not accept this and cooperation in Fisheries was terminated. DANIDA now gives cooperation to Mozambique in other fields.

**IFAD** has continued its support to integrated artisanal fishing community development with the ambitious USD 30 million project Sofala Bank Artisanal Fisheries Project starting up in early 2002 (partially to be financed with Norwegian funds). The project envisages continuation of interventions in Nampula and expansion of the project area to Zambezia and Sofala provinces. The project covers 5 areas of intervention:

1. Community development (incl. co-management and health care services),
2. Fisheries development (incl. Sustainable resource use, diversification of fish production and processing)
3. Market support and access
4. Financial services
5. Policy, legislative and institutional strengthening

**AfDB** is supporting the Artisanal Fisheries Development Project in Cabo Delgado province in the far north from 2002, and FAO is likely to continue its flood relief support to artisanal fisheries in central and southern Mozambique. The specialization of donors is quite clear. For instance, infrastructures are mainly financed by banks (BADEA, BID) and JICA.

**NORAD** institutional support continues to be significant in terms of the functioning of the Ministry of Fisheries. NORAD support addresses the weak institutional capacity within the Ministry of Fisheries of Mozambique, despite many years of donor activity in this area. Cooperation is undertaken under the Agreement between Mozambique and the Kingdom of Norway regarding "Continued Support to the Development of the Fishery Sector", signed on the 1st July 2005. The New Cooperation agreement comprises the following main purpose:

Development objective: An integrated public administration with improved capacity of fisheries policy development and implementation, including a system in operation for MCS within the jurisdiction of the Mozambican EEZ, integrated into a national fisheries plan.

The specific objectives are:

1. Adopt a sector wide approach to fishery development, establish clear lines of authority within the Ministry, and coordinate international donors;
2. Revise and update the fisheries Master Plan as a strategic long term guideline;
3. Redefine sector development programs and projects with reference to the revised Master Plan in line with PDSP 02/06.
4. Formulate and implement a Fisheries Statistics Plan;

5. Establish tools and procedures for planning and monitoring;
6. Implement economic analysis and cost-benefit calculation of alternative policy options as integrated fisheries management tools;
7. Revise and obtain approval for the Fisheries Law and bylaws;
8. A comprehensive MCS system in operation;
9. Develop and implement fishery management plans including objective and transparent criteria for fishing rights and quota allocations;
10. Develop IUU National Plans of action;
11. Implement the Ministry's plan for education and training of staff within the ministry and on provincial levels;
12. Expand fisheries relations on issues of global concern within the regional and international context;
13. Expand fishing opportunities for Mozambican offshore and high seas fisheries and maintain resource rent from foreign operators;

The new budget is shown in Table 41:

**Table 41: Tentative Budget from NORAD Cooperation Agreement**

Programme area	2005	2006	2007	Total
USD 1,000				
1. Fisheries administration and management	1,698	1,942	1,592	5,232
1.1. Policy planning and fisheries management	260	260	260	780
1.2. Revision and actualisation of the Master Plan	456	285	285	1,026
1.3. Implementation of Statistics master Plan	279	175	175	629
1.4. Fisheries MCS and administration	702	1,223	873	2,798
2. Fisheries research and assessment	409	423	423	1,255
3. Aquaculture development	159	159	159	477
4. Dev. of small and medium scale fishery enterprises and improve living conditions	252	252	252	756
5. Other issues — Fisheries : Museum	94	473	473	1,040
6. Programme	558	414	389	1,361
<b>Total</b>	<b>3,170</b>	<b>3,663</b>	<b>3,288</b>	<b>10,121</b>
Finance of the Programme:				
Contribution from NORAD (90%)	2,853	3,297	2,959	9,109
Contribution from Mozambique (10%)	317	366	329	1,012

Obs: Not yet approved by NORAD

Source: Agreement Mozambique-Norway

### 2.17.2 *Regional Donor-funded Projects*

#### 2.17.2.1 *South West Indian Ocean Fisheries Project*

**South West Indian Ocean Fisheries Project (SWIOFP):** is a World Bank-funded regional fisheries project that covers the EEZs of Kenya, Comoros, Mozambique, Tanzania western regions of Seychelles, the west coast of Madagascar, the French island territories in the region and the east coast of South Africa. Initiated in 2000, the Project focuses on existing and potential deep-water fisheries in the region. The project focuses on large-scale offshore resources and avoids imposing on the large number of programmes that are planned or underway in the coastal areas. Support is given to those countries that lack the capacity to investigate and manage these offshore resources. Due this lack of capacity, resources may be less than optimally exploited by local fishing fleets, although vessels from developed countries exploit them. SWIOFP provides the regional capacity to manage migratory species that regularly cross national boundaries. The project is intended to be long term, funded by the GEF / World Bank, and will concentrate on developing the capacity to collect and assess fisheries information. SWIOFP is co-ordinated by the Fisheries Research Institute (IIP) in Maputo, Mozambique. The SWIOFP project intends to link closely with the ‘*Agulhas and Somali Large Marine Ecosystem*’ programme, also funded by the GEF.

#### 2.17.2.2 *The SADC-MCS Programme*

The **SADC-MCS Programme** was financed by the European Union with a total of M€ 14.55 over the period 2001-2006. Ownership of the Programme is vested in the participating SADC states such as Angola, Mozambique, Namibia, South Africa and Tanzania. Activities were coordinated by a Steering Committee, which involved collaboration with governments, civil society, parastatals and the private sector. A consortium led by Lux Development SA provided technical assistance.

The principal guidance for the region was provided by the 2001 SADC Marine Fisheries Policy document, which state the following main points in relation to MCS:

1. the need to develop MCS on a regional basis;
2. to harmonise approaches to the management of the region's fisheries resources;
3. to establish regional programmes which are: feasible; cost effective; compatible; and sustainable.

Following the context of SADC Marine Fisheries Policy, the overall objective was to improve the management of marine fisheries resources of the SADC coastal Member States and the specific objectives were:

- Basic national institutional capacity for efficient, cost effective, and sustainable MCS established and maintained, and
- Mechanisms for effective regional co-operation on MCS established.

The direct beneficiaries of the programme were the region's fisheries administrations. Major activities concerned the developing and upgrading national MCS institutional capability and capacity and to strengthen regional MCS co-operation. The main elements of the programme were designed to assist the MCS administrations make the best use of the available resources and provide an enhanced MCS planning, operational and financial capability. These elements revolved around a series of major themes, and these include:

- Policy and strategy;
- Economics of MCS;
- Legal aspects;
- Inspectorates;

- Observer programmes; and
- Information systems (including VMS).

The expected outputs of the SADC-MCS programme were training of fisheries inspectors and observers, local training (language, computing, etc.), national/bilateral meetings, workshops, seminars, supply of radios/ walkie talkies, vehicles, 4WD, inflatables, computers & associated equipment, charter of coastal/offshore training patrol vessel, charter of aircraft trials and training and trials of VMS systems.

The project experienced a difficult start, but recovered to make good progress, albeit variable across countries. The final report is still under preparation. However, the project does not appear to have met its targets in relation to training and the charter of patrol vessels and aircraft.

#### 2.17.2.3 *Strengthening Fisheries Management in ACP Countries*

**Strengthening Fisheries Management in ACP Countries (ACP Fish II):** the Programme has been the subject of a feasibility study and a draft-financing proposal under the 9<sup>th</sup> EDF has been submitted. The financial envelope was extended to EUR30 million in May 2006 and the feasibility is being revised by consultants with a view to submission by AIDCO of the European Commission to the EDF Finance Committee later in 2006. ACP Fish II is intended to be the second phase of an earlier programme on “Strengthening of fisheries and biodiversity management in ACP Countries” (ACP Fish I - Project 7 ACP RPR 545). The overall objective is to assist partner countries in drawing up and implementing a strategy for the sustainable development of fisheries. ACP states should themselves identify and articulate their policy objectives, decide on how they intend to achieve those objectives, ensure that there is a consistency between policy objectives and the legislation intended to deliver those objectives, and to find solutions for obstacles that stand in the way of good policy being effectively implemented. The results to be achieved by the Programme include;

- (i) contribution made to the development and implementation of policies and management plans at regional and national levels,
- (ii) networks established and/or strengthened to exchange knowledge and for practical support on fisheries governance, policy and management,
- (iii) strengthened capacity of management and research systems, and
- (iv) strengthened systems for exchange and access to fisheries policy knowledge.

#### 2.17.3 *NGO projects*

Table 42 shows a summary of relevant activities undertaken by international NGO's:

**Table 42: Relevant activities undertaken by international NGO's**

Non Government Organisation	Activity
The World Conservation Union (IUCN)	Conservation oriented NGO with experience in community based natural resource management with activities in Zambezi and wetlands management. Manages a major environmental training programme financed by the Dutch development agency.
World Wildlife Fund (WWF)	Conservation oriented NGO involved in the management of the Bazaruto Marine National Park in Inhambane province.
CARE:	Implemented part of the IFAD Nampula Artisanal Fisheries Project.
World Relief /Fundo de Crédito Comunitário (FCC)	Largest MFI in Mozambique, mainly involved in

	village banking but with an interest in fisheries in areas with fisheries concentration
Agency for Co-operation and Research in Development (ACORD)	Has credit and processing in Niassa in cooperation with IDPPE
Oikos, Cooperação e Desenvolvimento	Has administered a credit programme in Niassa in coordination with IDPPE.
Cooperative League of the USA , National Cooperative Business Association (CLUSA)	Promotion of fisheries associations, Nampula.
International Collective in Support of Fishworkers (ICSF)	Has contributed to the development of a gender strategy for SBAFP

#### **2.17.4 Donor coordination**

Given the level and scope of donor and NGO activity in the Mozambique fishery sector as described above, donor coordination is a key issue. However there appears to be very limited oversight and coordination of the activities of both international donors and NGO's. A Department for International Cooperation has been established in the Ministry for Fisheries, but it has not been given a mandate to coordinate cooperation.

Given the importance of the FFP in the administration of donor funds there is need for a much stronger level of coordination and management between beneficiaries, the Ministry and donors.

#### **2.17.5 International Fisheries Agreements and Initiatives**

The development of a Mozambican industrial basis within the fisheries sector has been a guiding principle since after the independence, but it was recognized that this was a process that would take some time to develop. To secure an economic use of the Mozambican fish resources it was decided to permit the operation of foreign fleets on the basis of fisheries agreements. The first fisheries agreement was signed with the Soviet Union (former URSS) in 1976, just one year after the independence, with a validity period of five years. In 1988 a fisheries agreement was signed with the European Community (EC). These agreements included in their scope, cooperation in respect to access to fishing rights, research and experimental fishing, etc. and the direct benefits that Mozambique received included financial assistance for fisheries development programmes, institutional capacity building, technical assistance, training and scholarship for Mozambicans in the international universities, etc.

The approval of the Fisheries Law in 1990 reflects a change in the fisheries policy and institutional context. The new policy aimed to increase the national benefits of exploitation of fish stocks within the territorial waters of Mozambique. Fishing opportunities were to be reserved for the national fleet and Mozambican registered joint venture companies. It was considered that there were enough operational national companies with sufficient capacity to fish the available coastal stocks. These ventures are still operational. However the policy has not been successful with respect to the highly migratory tuna stocks, since Mozambican operators do not have neither the tradition of fishing these resources, nor the technological and marketing capacity to utilize them.

Existing international agreements related to fisheries cooperation are shown in Table 43. Apart from the EU fisheries agreement, formal fisheries agreements have only been concluded with Namibia and Spain. An agreement is under negotiation with South Africa. Agreements with Cuba and Mauritius have also been made, although they have not yet been ratified or implemented.

Table 43: International Fisheries and Commercial Agreements (excluding EU agreement)

Agreements with Mozambique	Period / Principal fields	Present Situation
MoU <b>Namibia</b>	<p>Signed: 2/11/2001; Duration 3 years, continuation if with agreement of both parts.</p> <p>Areas:</p> <ul style="list-style-type: none"> <li>• <u>Institutional</u>: research, surveillance and management of fisheries, and training;</li> <li>• <u>Economical</u>: Access for fishery opportunities, via development of joint ventures between vessel owners of both countries, promotion of trade.</li> </ul>	<p>Economical component in execution.</p> <p>Institutional collaboration Programs should be financed by respective governments.</p>
FA <b>Mauritius</b>	<p>Signed: 29/03/2002; Duration 3 years, continuation if with agreement of both parts.</p> <p>Components:</p> <ul style="list-style-type: none"> <li>• <u>Institutional</u>: research, training, Exchange of data and technology, fish processing and aquaculture</li> <li>• <u>Economical</u>: Access for fishery opportunities (gamba, highly migratory species e demersals, and investments in aquaculture, via development of joint ventures between vessel owners of both countries)</li> </ul>	<p>Not yet operational.</p> <p>Institutional collaboration Programs should be financed by respective governments.</p>
MoU <b>Cuba</b>	<p>Signed: 15/04/2004. Includes institutional and private collaboration:</p> <ul style="list-style-type: none"> <li>• Institutional: freshwater aquaculture, artisanal fisheries (technology and fish processing, fishing gear), fisheries administration (regulating, database, research, training (Cuban trainers and teachers to go to Mozambique))</li> <li>• Private Collaboration: availability of crews from Cuba.</li> </ul>	<p>Not yet operational, due to financial support required from Mozambique government.</p>
MoU <b>Spain</b>	<p>Signed in: 20/03/2001. Fields:</p> <ul style="list-style-type: none"> <li>• Support for Fisheries Administration, MCS, sanitary collaboration, training (improvement of technical capacity), research, support to artisanal fisheries, technical advisers in respect aquaculture.</li> <li>• Commercial cooperation: 2 joint-venture companies operating in Mozambique (Pescamar and Krustamoz)</li> </ul>	<p>In implementation</p>

Agreements with Mozambique	Period / Principal fields	Present Situation
<p>Agreement on Fisheries and Coastal and Marine integrated Management, with <b>South Africa</b></p> <p><i>Agreement comprising sectors of fisheries, environment, tourism, transports and communications.</i></p>	<p>Cooperation areas include:</p> <ul style="list-style-type: none"> <li>• <u>Institutional</u>: Research and management of marine and coastal resources, Exchange of scientific and technical information, MCS, eco-tourism, development of marine aquaculture, mitigation of marine and coastal pollution impacts, training program.</li> <li>• <u>Economical Cooperation</u>: development of joint-venture companies and access to fishing opportunities of both countries.</li> </ul>	<p>In negotiation.</p> <p>Last FA terminated in dez/2000, after several revisions since the adoption of the first protocol in 1992.</p>



### *2.17.6 Membership of regional organisations*

Mozambique participates in relevant regional initiatives and agreements. Mozambique is a member of the South-West Indian Ocean Fisheries Commission (SWIOFC), that was formally established in November 2004 and covers the sea areas off the shores of East Africa and several island states of the region. Though SWIOFC's mandate focuses on coastal fishing, a parallel agreement on regional cooperation on the high seas fishing of non-tuna resources is being negotiated. The Commission's members include 14 coastal states whose territories are situated wholly or partly within the SWIOFC area of competence. Other countries may participate as observers. SWIOFC recently held its first meeting (Mombasa, Kenya 18-20 April 2005), during which it agreed to establish a scientific committee to focus on fisheries data collection and on providing resource managers with much-needed information on the status of stocks. Mozambique has also signed the important FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.

However Mozambique is not a member of the Indian Ocean Tuna Commission, an intergovernmental organization set up under Article XIV of FAO mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. Membership as a contracting or cooperating non-contracting party has been considered, and some informal engagement has taken place. However there is a lack of certainty regarding the benefits of membership. The EU is a member and IOTC was supported by the EC with a financial contribution in 2003 was € 312,277. Mozambique is not a member of the West Indian Ocean Tuna Organization (WIOTO), established in 1994 (the only member countries are Seychelles, Mauritius, Comoros, and India).

SADC Protocol on Fisheries (2001) was signed by SADC countries, including Mozambique. It is an important protocol as it seeks to promote the responsible and sustainable use of aquatic resources by member states and vessels operating under their jurisdiction. This includes stocks within the EEZ of coastal SADC states as well as stocks occurring on the high seas that are of interest. State obligations include the reduction of over fishing; incorporation of protocol regulation into national legislation and co-operative management of fish stocks where appropriate. Scientific research, skills transfer and the harmonisation of relevant legislation to promote the management of fisheries is promoted. This convention is open to all SADC states. The SADC Protocol on Fisheries, came into force in August 2003, providing the fundamental authority and context for the SADC MCS Programme (see above). In this context the most important features of the Protocol for the MCS Programme are in Article 7 – Management of Shared Stocks, Article 8 – Harmonisation of Legislation and Article 9 Law Enforcement and Article 14.6 on Coastal Zone Management. The Protocol gives a set of realistic targets in the specific subject areas in which the Programme is concerned.

### *2.17.7 Consistency between the partner country and international commitments*

In accordance with the Fundamental Law the approved and ratified treaties and international agreements constitute national law after their official publication and have the same power as the legal acts of the parliament and the government (Art. 18). Therefore such treaties have automatic application within Mozambique once they are formally ratified.

General principles resulting from multilateral agreements to which Mozambique is a Party have been adequately integrated in the national legislation. That is the case for instance of the precautionary principle and the concepts of Monitoring and Surveillance which have been imported from the SADC Fisheries Protocol and defined in the main fisheries regulation "REPMAR", which was adopted in 2003, although they are not included in the Fisheries Law.

In accordance with the FAO Compliance Agreement the legislation in force covers the fishing activities of the national flagged vessels beyond the area of jurisdiction of the State, and requires both industrial and semi-industrial vessels to be marked and to provide information relating to the vessel and fishing activities. The installation of automatic location devices is also required since 2003 and there is protection of data confidentiality. However there are no specific provisions regarding the obligation to sanction the unauthorised disclosure of confidential information (as required by the FAO Compliance Agreement).

Notable is the requirement that imprisonment for violation of the fisheries laws and regulations in the EEZ is not allowed and foreign fishing vessel and crew shall be released on the posting of a reasonable bond or other security in line with UNCLOS

The main areas of inconsistency between the national legislation and the international commitments relate to the sanctions scheme and evidentiary rules. The obligation to ensure that sanctions are effective in securing compliance and the suspension of authorisation to fish in the event of non-compliance with conservation and management measures is not reflected in the present legislation. Also except for the admissibility of VMS information in court the existing legislation does not contain other legal presumptions. Importantly the destruction of evidence does not constitute an offence.

Mozambican legislation generally conforms with the international commitments which were not reflected in the outdated framework law of 1990. However to ensure full compliance it is essential that the framework law is revised and updated.

Mozambique's non membership of the IOTC raises the question regarding the extent to which, were the Agreement not to be renewed, EU vessels would be subject to IOTC management recommendations. According to the IOTC Agreement, Art IX states that Members shall comply with the management measures issued by IOTC and Art X (paragraph 4) states that Members shall collaborate on the exchange of information of fishing for stocks covered by the Agreement by any State or Entity which is not a member. Therefore, the implication is that even when fishing in a non-member EEZ, EU vessels shall be bound by the IOTC management recommendations. However, Mozambique would have no such requirements, and would be free to regulate the fishing of resources subject to IOTC management according to other criteria. This could possibly give rise to different management regimes to EU and other third country vessel operating within the same EEZ, which would clearly be an untenable situation.

## **2.18 STAKEHOLDERS**

### ***2.18.1 National Stakeholders***

#### ***2.18.1.1 Industrial and semi-industrial sector***

There are three large industrial and some 200 semi-industrial companies (including individuals) involved in shrimp fishing, with about 8,000 employed directly by the industrial and semi-industrial fisheries.

#### ***2.18.1.2 Joint ventures***

The Government has pursued a strategy of promoting Mozambican national participation in shrimp fishing, using a Government controlled firm Emopesca to form joint ventures. This was achieved by issuing substantial numbers of new quotas to new entrants, but without reducing the industrial fleet participation. Companies have therefore been created with foreign capital (principally Spanish - Pescamar and Krustamoz; and Japanese - Efripel).

However, the allocation procedure of the new licenses has not been transparent, with substantial values being transferred without clear regulation or distribution criteria. In any case the arrangement has not been as successful as had been planned at the start, in that the Mozambican operators appear not to have been able to develop their share. Fully independent national operators in this sector remain scarce. Emopesca is presently in liquidation process and the private partners of each company are in the process of buying the States' shares of each joint-venture, although through a non transparent process. Information regarding the price of the shares, and the means of allocation, is not in the public domain.

#### ***2.18.1.3 Producer Organisation and Sector Representation***

The national industrial and semi-industrial sectors are represented by three producer organizations. Their scope is summarized in Table 44.

**Table 44: National industrial and semi-industrial sectors**

		<b>AMAPIC</b>	<b>ANAP</b>	<b>ASSAPEMO</b>	<b>Total</b>
Industrial	Companies	11	6	5	22
	Vessels	42	12	7	61
	Shrimp Quota (t)	6,025	1,545	750	8,320
Semi-industrial	Main companies (does not include individual vessel owners)	3		5	8
	Vessels	8		10	18
	Shrimp Quota (t)	565		600	1,165

AMAPIC was formed to represent companies with foreign capital and foreign owned vessels. At one stage it also represented the 2 big joint-venture companies, Pescamar (with Spanish interest) and Efripel (with Japanese interest). At present the membership represents about half of the industrial companies in the sector, owning about 65% of the larger shrimp trawlers. Most of the remaining, smaller vessels, are represented by ASSAPEMO. Both, ANAP (exclusively industrial fishing) and ASSAPEMO have represent owners of fishing quota which undertake so called “afretamento” essentially charter arrangements with foreign vessels (with South African and European ownership) which then fish the quota under the Mozambique flag. The annual value of the chartering of shallow water shrimp license is reported to be in the order of US\$270,000 – 300,000 per 100 tonnes of quota. At present afretamento activity is being reduced, and ANAP and AMAPIC have merging interests and therefore are in negotiation for merging their associations.

The Producer Associations are highly engaged in the process of management discussions with the authorities particularly the rules on how quota rights should be allocated. Some of the vessel owners appear to have disproportionate influence in the decision making process. AMAPIC has also chartered a trawler to IIP, and has supported MCS activities (e.g. by chartering a plane for this purpose during the closed season for shrimp).

There is also another semi-industrial association although with limited representation: ARMAPESCA represents the semi-industrial vessels and some artisanal operating in the bay of Maputo.

The Kapenta fishery is also represented with one association (AP Kapenta), while artisanal fishers have small associations in development, although these are more traditionally organized following community councils.

#### *2.18.1.4 Employment in industrial and semi industrial fisheries*

An estimated 8,000 people are employed directly by the industrial and semi-industrial fisheries. Captains and Officers are usually European (Spanish and Portuguese) / Japanese, amongst joint-venture companies and charter arrangements (European, South African, and Russian).

The official base wage, per month, of crewmen is between 5 million (€172) and 9 million meticaïs (€310) in addition they receive by-catch that can be sold. However the actual monthly wage of crew operating in shrimp trawler is estimated to be around 16-18million meticaïs (€550-620).

#### *2.18.1.5 Artisanal Marine fishery sector*

Numbers involved in fishing are shown in Table 45 and are estimated to be about 70,000. Others involved are collectors, divers and those in upstream / downstream activities. About 2,100 are involved in artisanal vessel construction and repairs and 5,500 in fish processing. Large numbers operate as traders, especially serving the regional markets in dried kapenta. Women account for the majority of fish collectors and traders.

No overall national level data regarding income of artisanal fishermen is available. A few baseline studies have been carried out in different parts of the country over the years. The studies indicate that on average, artisanal fishermen/households are extremely poor, however there is considerable socio-economic differentiation. Three main groups can be distinguished: (1) the more privileged boat and gear owners, and the less privileged groups (comprising the vast majority) consisting of (2) crew (employees), and (3) fishers fishing by foot/collectors.

Many artisanal fishing households also engage in farming of suitable crops in the coastal soils such as cassava, sorghum, tree crops such as coconuts and cashew, as well as firewood collection, (boat) transport and trade. Other opportunities for diversification and improvement of incomes derive from emerging investment in the coastal zone by other sectors e.g. tourism. However, some of these emerging investments also imply constraints for artisanal fishermen.

With such a long coastline, conditions vary considerably. Zambezia and Nampula provinces are the most populated with about 40% of the country's population and are also the poorest provinces. Nampula also has the largest number of artisanal fishermen, with 33% of total. Other provinces with high numbers of fishermen are Cabo Delgado (23%), Sofala (13%) and Inhambane ( 11%).

The poor road access to fishing communities, which are frequently completely cut off during the rainy season, in particular affects that part of artisanal fisheries which is oriented towards the market. Post-harvest losses are negatively affected and so are fishing inputs (prices and availability) and fishermen's negotiation power, implying low producer prices. In a wider perspective poor access and associated problems affect income and hence investment and reinvestment capacity.

Table 45: Number of people involved in artisanal fisheries sector

	Fishers				Other resource exploitation activities			Upstream / Downstream			
	Full-Time	Part-Time	Without vessel	Sub-Total	Collectors	Divers	Sub-Total	Carpenters	Processors	Sub-Total	Total
Cabo Delgado	12,579	3,050	246	15,875	6,056	1,399	7,455	375	862	1,237	24,567
Nampula	20,452	2,276	212	22,940	7,647	2,476	10,123	1,018	2,216	3,234	36,297
Zambézia	9,207	807	364	10,378	627	6	633	249	593	842	11,853
Sofala	7,571	1,621	149	9,341	926	0	926	168	1,181	1,349	11,616
Inhambane	4,024	3,434	380	7,838	4,864	2,610	7,474	204	591	795	16,107
Gaza	671	28	70	769	404	29	433	26	53	79	1,281
Maputo	1,794	377	47	2,218	3,007	12	3,016	139	85	224	5,458
TOTAL	56,298	11,593	1,468	69,359	23,531	6,532	30,060	2,178	5,581	7,759	107,178

Source: IDPPE Census 2002

### *2.18.2 EU Stakeholders*

Spanish surface longliners licensed through the Mozambique –EU fisheries agreement are principally associated to the National Association for Owners of Deep-sea Longliners (ANAPA).

This Association was established in April 1988 in the interest of the longliner freezing vessel owners. The cooperative comprises nine Vessel Owners' Associations and two Producers' Organisation all located in the Port of Vigo. At present 271 companies make up the Vessel Owners' Co-operative. Vessels belonging to the Association's members are fish freezing boats operating as deep sea longliners, although they can also operate with other fishing gear. The main home ports are diverse, but Vigo is prominent. The duration of trips made by these vessels is between 45 and 90 days. Average crew is 16, made up of European and African nationals.

Portugal has had between 4 and 6 licensed surface longliners drawing licences under the EU/Mozambique Fisheries Agreement. The main company is Pescarias Ilha Graciosa located in Peniche with 2 -3 vessels. Other Portuguese flagged vessels have a Spanish ownership. The vessels are c.30-35m length and about 250TAB. Gear and crew composition is the same as of the Spanish vessels operating in the area.

Portuguese surface longline vessels are in general members of both ADAPI – Associação dos Armadores de Pesca Industrial, (Association of Industrial Fishing Vessel Owners) and of OPESCA (Producer Organisation of Industrial Vessel Owners). ADAPI has headquarters in Lisbon and OPESCA in Aveiro.

ADAPI comprises 40 companies and 80 vessels, most of which are coastal vessels operating in the Portuguese EEZ (about 60 vessels from different ports along the coastline). It also comprises 10 fish trawlers operating mainly in the NAFO area (mainly based in Aveiro), 4 surface longline operating in Africa and Pacific (mainly based in Peniche) and 6 Industrial shrimp trawlers operating mainly in Africa (also based in Aveiro).

### *2.18.3 Summary of stakeholder interests*

Table 46: Main Fishery sector stakeholders and production

	Subsistence and Artisanal Fishery <sup>/a</sup>	Fish Industrial Fishery and Processing industry (excl EC FA fleet)	EC Fleet			Other
			Tuna	Surface LL	Total	Tuna and sLL
Production (t) <sup>/b</sup>	100,000	32,000	12000 <sup>/c</sup>	0	12000	5395 <sup>/d</sup>
Directly employed Moz. (Full Time and part-time)	99,500	8,000	0	0	0	0
Foreign fishers directly employed (Full Time Equivalent)	0		700 <sup>/e</sup>	130 <sup>/f</sup>	830	1216 <sup>/g</sup>
Artisanal Processing	5,500	-	n.a.	n.a.	n.a.	n.a.
Artisanal vessel construction	2,178	-	n.a.	n.a.	n.a.	n.a.
Fish Distribution Indirect employment (National)	Not known, although some authors estimate to be 3x the number of fishers	Included in directly employed	n.a.	n.a.	n.a.	n.a.
Indirect employment (EU) (Full Time Equivalent)	0					
Direct employment (EU) (Full Time Equivalent)	0	150 <sup>/h</sup>	350 <sup>/i</sup>	78 <sup>/j</sup>	428	0

<sup>/a</sup> From Census 2002 and estimates of IDPPE<sup>/b</sup> Production in Mozambique EEZ<sup>/c</sup> catch for 2004<sup>/d</sup> catch for 2005<sup>/e</sup> estimated considering 35 seiners and a total average 20 ACP crew members by vessel<sup>/f</sup> estimated considering 13 surface LL and a total average 10 ACP crew members by vessel<sup>/g</sup> estimated considering 9 seiners (average 32 crew members) and 58 surface LL (average 16 crew members)<sup>/h</sup> estimated of a total fleet of 90 industrial (shrimp trawlers and line fishing) and 77 semi-industrial vessels (shrimp trawlers). Normal employment positions: Captain. considering 13 surface LL and a total average 10 ACP crew members by vessel<sup>/i</sup> estimated considering 35 seiners and a total average 10 EU crew members by vessel<sup>/j</sup> estimated considering 13 surface LL and a total average 6 EU crew members by vessel

### **3 EVALUATION SPECIFIC TO THE FISHERIES PARTNERSHIP AGREEMENT**

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#### **3.1 EVOLUTION OF THE FISHERIES PROTOCOLS**

In October 1988 the EC and Mozambique concluded a Fisheries Agreement providing Community vessel owners fishing opportunities for shallow-water shrimp, deep-water shrimp and tuna in return for financial compensation. In practice, this Agreement was gradually restricted to tuna fishing, before being terminated in 1993 by Mozambique, which considered that it was no longer in a position to promote the development of its fishing sector through this means.

In May 1996 the Council of Ministers requested the Commission to negotiate a new bilateral Agreement with Mozambique. Exploratory talks were held with Mozambique from 1999 and a new Agreement was initialled on 21 October 2002. The new Agreement was introduced by Council Regulation (EC) No 2329/2003 of 22 December 2003 “*on the conclusion of the Fisheries Agreement between the European Community and the Republic of Mozambique*”. In gaining access to Mozambique waters, EC fishing vessels therefore resumed fishing activities already carried on in the past, and the new Agreement added to the network of Community tuna agreements in the Indian Ocean region.

#### **3.2 PRINCIPAL FEATURES OF THE CURRENT PROTOCOL**

##### ***3.2.1 Summary of the current Protocol***

The current protocol is the first protocol under the current Agreement. It entered into force on 1 January 2004 and provides fishing opportunities for deepwater shrimp trawlers, tuna purse seiners and surface longliners. The duration of the protocol is for a period of 3 years, until 31 December 2006.

The main characteristics of the Protocol are as follows:



Table 47: Main characteristics of the 1st protocol

2004/2006	
Annual Financial Compensation	
Total Compensation	€ 4,090,000
Compensation for Tuna fishing	€ 600,000
Compensation for Shrimp fishing	€ 3,490,000
Financial Compensation measures <sup>1</sup> :	€ 1,500,000 for monitoring marine fisheries <sup>/2</sup> € 1,000,000 for institutional development <sup>/2</sup> € 1,000,000 for research <sup>/2</sup> € 430,000 for training <sup>/3</sup> € 100,000 for quality control <sup>/2</sup> € 60,000 for participation in Joint Committee and other international meetings <sup>/3</sup>
Extra financial compensation for tuna fishing	75/t subject to an upper limit of € 1,800,000
Fishing Opportunities	
<b><i>Tuna Seiners and Surface long-liners</i></b>	
Catch Limit	8,000 tonnes
Catch Limit according to Annual licence fee <sup>a</sup> (t)	120 tonnes (tuna seiners) 60 tonnes (surface longline)
Max N° Tuna seiners	35
Max N° surface long-line Vessels	14
Licence fee unit (€/t)	€ 25 per tonne
Licence fee <sup>b</sup>	€ 3,000 (tuna seiner) € 1,500 (surface long-liner)

2004/2006	
<b>Deepwater Shrimp Trawlers</b>	
Catch Limit (t/year)	1,000 tonne deepwater shrimp (gamba)
Bycatch (t/year)	535 tonnes comprising Dublin bay prawn 100t ; Cephalopods 75t ; Fish 240t; Crawfish 0t; Crab: 120t
Max N° Vessels	10
Max authorised power (HP/vessel)	1,500
License fee (€/t of the quota) <sup>/4</sup>	€ 600 <sup>/5</sup>
Health inspection fees (vessel/year)	€ 1,550 <sup>/6</sup>
<b>Joint Committee</b>	The agreement does not include provision for a joint scientific meeting to monitor stock status. A Joint Committee shall monitor the application of the Agreement, including the level of fishing opportunities
<b>Satellite monitoring</b>	All vessels shall be subject to install VMS according to Mozambique legislation
<b>Employment in Trawlers</b>	Half of non-officer crew
<b>Observers</b>	Admission on board fisheries inspectors and scientific staff when indicated by the corresponding Mozambican authorities;
<b>Fishing zones</b>	All vessels between parallels 10° 30' S and 26° 30' S, beyond 12 miles from the coast Trawlers also depths of more than 150m
<b>Transshipment in Trawlers</b>	Transshipment should be conducted in the ports of Beira or Maputo and may undergo a fisheries inspection. Trawlers leaving with catch shall be submitted for inspection.

<sup>/a</sup> Extra catch subject to extra financial compensation

<sup>/b</sup> The licence fee is payable by the vessel operators on an annual advance basis

<sup>1</sup> Amounts destination may be amended by the Government of Mozambique after informing the EC Commission.

<sup>2</sup> Amounts payable on the basis of the annual programme into foreign currency account in name of Fundo de Fomento Pesqueiro.

<sup>3</sup> Amounts paid as and when the Ministry of Fisheries requests them from the EC for the purpose of covering the projected measures.

<sup>4</sup> Payable in advance

<sup>5</sup> Amended to 300€ for 2005 and 150€ for 2006

<sup>6</sup> Amended to 1,100 € per vessel per year for 2005 and 2006

### **3.2.2 *Fishing possibilities***

Where shrimp fishing opportunities are concerned, the Protocol lays down that a maximum of ten vessels will be authorised to fish for a quota of 1,000 tonnes of deep-water shrimp, and may retain on board up to 535 tonnes of by-catch. The Commission is responsible for monitoring developments in shrimp-fishing vessels' catches in order to ensure that the overall quota is not exceeded. These fishing opportunities are allocated to Spain (550 tonnes), Greece (150 tonnes), Italy (150 tonnes) and Portugal (150 tonnes).

In addition, for the tuna fishery, the Protocol provides fishing opportunities for 35 freezer tuna seiners, allocated to France (18 vessels) and Spain (17 vessels), and for 14 surface longliners, allocated to Spain (8 vessels), Portugal (5 vessels) and France (1 vessel), with an overall reference tonnage of 8,000 tonnes of tuna and related species.

### **3.2.3 *Financial aspects***

The overall financial compensation has been fixed at €4,090,000 a year, including €3,490,000 related to the deep-water shrimp fishing opportunities (including by-catches) and €600,000 for fishing opportunities for tuna and related species. Additional financial compensation for catches of tuna above the reference tonnage is subject to an upper limit of €1,800,000. The entire financial compensation is allocated by the Protocol to measures targeted at institutional development, marine surveillance, research, training, quality control and participation by Mozambique in the meetings of the Joint Committee and other international meetings. This must contribute significantly towards the development of management capacities for Mozambique fisheries as a whole. The Ministry of Fisheries is required to submit annual reports on the implementation of the measures, for adoption by the Joint Committee.

### **3.2.4 *Other requirements***

Shrimp fishing vessels fishing under the Agreement are obliged to take on a sufficient number of Mozambican seamen to make up half of their crew. They may be subjected to health inspection procedures in accordance with Mozambique legislation. EU trawl vessels' catches are required to be transhipped in a Mozambican port in the presence of the Mozambican authorities, or subject to inspection before departure of the catching vessel. The inspection procedures are deemed not to affect the Community origin of the catches.

## **3.3 FISHING ACTIVITIES UNDER THE PROTOCOL**

### **3.3.1 *Utilisation of fishing opportunities***

A summary of fishing opportunities defined in Article 1 of the Protocol and licences drawn for the 3 years of the protocol 2004-2006 is shown in Table 48. This is based on data from the European Commission complemented with the licence data held by the EC Delegation in Mozambique.

The protocol is now in its third year. Over the period to the date of this evaluation mission, the annual average utilisation of fishing licence opportunities has been 99% for purse seine vessels, 83% for surface long-line vessels and 0% for shrimp trawlers. The vessels drawing licences on the period comprised 35 purse seiners, and 14 surface long line vessels. The main features of the utilisation of the fishing opportunities are:

- No licences for shrimp fishing have been drawn by any EU vessel at any time.
- There is practically a full utilisation of purse seine fishing opportunities
- There is a high utilisation of surface long-line licence opportunities by Spanish and Portuguese operators. However the one license available to a French vessel has not been drawn at any stage.

- In 2004 and 2005, tuna fishing opportunities were transferred between Member States (France to Italy, and France and Portugal to Spain)

### 3.3.2 *Catches*

Table 48 shows the number of active vessels drawing licences in each fleet segment, and Table 49 shows the resulting catches. More specific details of the vessel activities is provided below. The main features of note are that:

- Catch data is only available for 2004
- Tuna purse seining yielded an average catch of 345 tonnes per vessel in 2004, requiring additional licence fees to be paid for catches in excess of 120 tonnes/vessel. The total catch was 12,060 tonnes, accounting for 4.6% of the 2004 catch of the EU purse seine fleet in the Indian Ocean during the period (261,526 tonnes)
- Longline vessels did not fish in the Mozambique EEZ in 2004 and 2005, and have declared zero catches

It is notable that individual vessel catch declarations have not been submitted directly by EU vessel operators to the Mozambique authorities. The requirement is that such declarations are submitted within 45 days of departure from the EEZ. The only data available is through the annual statements based on the consolidated catch data submitted to and confirmed by Member State institutions. The consultants were informed that the 2005 data has not yet been submitted to the Mozambique Authorities.

Table 48: Number of fishing opportunities available drawn and utilised by EU vessels fishing under the EU- Mozambique fisheries protocol (2004-2006)

SECTOR/COUNTRY	2004			2005			2006			Average		
	Licences			Licences			Licences			Licences		
	N° Vessels or tonnes			N° Vessels or tonnes			N° Vessels or tonnes			N° Vessels or tonnes		
	Available	Drawn	%	Available	Drawn	%	Available	Drawn	%	Available	Drawn	%
<b>Tuna seiners (in N° Vessels)</b>												
France	18	15	83	18	14	78	18	16	89	18	15.0	83
Italy <sup>A</sup>		1			1			1			1.0	
Spain <sup>B</sup>	17	19	112	17	20	118	17	17	100	17	18.7	110
<b>Total</b>	35	35	100	35	35	100	35	34	97	35	34.7	99
<b>Surface longliners (in N° Vessels)</b>												
Portugal	5	2	40	5	4	80	5	5	100	5	3.7	73
France	1	0	0	1	0	0	1	0	0	1	0.0	0
Spain <sup>C</sup>	8	8	100	8	9	113	8	7	88	8	8.0	100
<b>Total</b>	14	10	71	14	13	93	14	12	86	14	11.7	83
<b>Shrimp freezers (in quota - t)</b>												
Spain	550	0	0	550	0	0	550	0	0	550	0	0
Greece	150	0	0	150	0	0	150	0	0	150	0	0
Italy	150	0	0	150	0	0	150	0	0	150	0	0
Portugal	150	0	0	150	0	0	150	0	0	150	0	0

Source of license data: European Commission, DG Fisheries License Unit; and, EC Delegation in Mozambique.

A: includes transfer of one French license to an Italian vessel, considered by the Commission to be operating outside the Agreement (due to failure of the Italian Government to submit the licence application due to an administrative error)

B: transfer of two French licenses in 2004 and three French licenses in 2005 to Spanish vessels

C: transfer of one Portuguese license to a Spanish vessel

Table 49: Catches declared by EU vessels fishing under the EU- Mozambique fisheries protocol, 2004

Country	Type of Vessel	No. active vessels	TOTAL catch	Mean Catch by Vessel	Fleet (licenses)
			tonnes		
France	Purse seine	15	8,800	587	9,646
	Longline				
Italy <sup>1</sup>	Purse seine	1	846	846	
	Longline				
Portugal	Purse seine				
	Longline	2	0		
Spain	Purse seine	19	2,414	127	2,414
	Longline	8	0		
Total	Purse seine	35	12,060	345	
	Longline	10	0		

<sup>1</sup> includes catches considered by the Commission to be made outside the Agreement and not eligible for payment of the Community contribution

### 3.3.3 Shrimp trawling (for deepwater shrimp species)

None of the fishing opportunities for deepwater fisheries were utilized over the period of the Protocol. The principal reason for this is that the fishery is not sufficiently financially attractive for European vessel owners.

There are several reasons why this is the case:

- Lack of commercial value; the species of *gamba* concerned are mainly comprised of *Haliporoides triarthrus vnirio* (gamba rosa) and *Aristaeomorfa foliacea* (gamba vermelha)<sup>44</sup>. The species mix is different to the deepwater shrimp fisheries exploited in for example Angola, where the dominant species are the red striped shrimp *Aristeus varidens* and the rose shrimp *Parapenaeus longirostis*, the former especially characterised by strong demand and high market value. The Mozambique *gamba* species have rather limited marketing potential, with relatively small niche markets in Asturias in Spain, Porto in Portugal and South Africa. As a result the average price is €5-7/kg for the premium species, compared with up to €9-10/kg for *A.varidens*. Non-target (bycatch) value from this fishery is also reported to be substantially lower than in other deepwater shrimp fisheries.
- The technical characteristics of the fishery require trawling at between 400-700m depth. This is a high cost activity compared to shallow water shrimp fishing, due to additional fuel consumption and more expensive fishing gear.
- Fishing vessels operating at these depths also need a minimum of logistical support structure to repair more frequent breakdowns of fishing gear. This usually requires accessible facilities and this type of support is expensive, and of limited availability in Mozambique.
- The price of fuel in Mozambique is significantly higher for non-national fishery operators, due to a differential taxation rates applied (+10%), thus putting foreign operators at a competitive

<sup>44</sup> And in reduced percentages: *Penaeopsis balsii*, *Plesiopenaeus edwardsianus* and *Aristeus antennatus*

disadvantage to domestic operators. Marine diesel is reported to be significantly more expensive in Mozambique than in some other African countries, making the fishery less competitive.

The fishery is of interest to vessels with a nearby fishing base, which can undertake a complementary fishing pattern, by fishing for both deepwater and shallow water shrimps combining the periods when shallow water shrimp yields are reduced or during the annual closure of that fishery. Therefore the most viable sectors which can exploit this resource are national or South African vessels (in the latter case combining with shallow water shrimp fishing off the coast of Kwazulu-Natal). The fishery is therefore exploited by a number of vessels from these fleets. Typically, vessels will switch from shallow water shrimp late in the season, as yields decrease.

#### **3.3.4 *Purse seiner segment***

Over the course of the Protocol an annual average of 35 purse seiners have drawn licences to fish in the Mozambican EEZ. All vessels which drew licences in 2004 utilised the fishing opportunities, and reported total catches of 12,060 tonnes. This catch exceeded the reference quantity by more than 50%, incurring additional compensation paid by the EU of €75/tonne. Twenty-one vessels paid additional licence fees for catches in excess of 120 tonnes/vessel (of €25/tonne).

EU tuna vessels fish in Mozambican waters within the framework of a regional strategy to follow schools of large migratory fish, tuna and tuna-like species. Evidence from Satellite VMS positional data indicates that a significant amount of the catches are taken around the maritime border with Tanzania. All the 35 purse seine vessels fishing in Mozambique also drew private licences from the Governments of Tanzania.

It is important to point out that catches of yellowfin tuna from free swimming schools in particular, were unusually high in the waters off Tanzania and Mozambique in 2003 and 2004, but that the situation is reported to now be reverting to the normal pattern in 2005, with a return to the dominance of catches by skipjack, predominantly from fishing on FADs. The management of these stocks is within the framework of the regional organization IOTC, of which the European Community is a member, but Mozambique not.

#### **3.3.5 *Surface long line segment***

Over the each year of the Protocol an average of 12 Spanish and Portuguese surface longliners have drawn licences to fish in Mozambique. Discussions with Spanish and Portuguese SLL operators indicate that there was no fishing in the Mozambique EEZ during 2004 and 2005. However, there are indications that in 2006 some of the vessels may pursue their activities within the EEZ.

Despite the surface longliners being included under the tuna elements of the Protocol, the EU surface long-line vessels typically target swordfish and shark in the SWIO (Southwest Indian Ocean). Discussions with ARVI (Cooperative of Vessel Owners) based in Vigo suggest that sharks and swordfish each represent about 50% of the regional catch of EU vessels. Tuna and others account for only 1.5% of retained catch. Total average catch per year of the segment is 500 tonnes/vessel, reported to be taken mainly in international waters.

### **3.4 COMMUNITY VESSELS COMPLIANCE WITH AGREEMENT PROVISIONS**

#### **3.4.1 *Entry and exit notices***

There appears to be a lack of compliance by EU purse seine vessels with the protocol conditions in respect of EEZ entry and exit notices. The Mozambique authorities cite a number of cases of non-compliance, with the result that it is not always possible to cross check catch declarations from tuna seiners with the known presence of the vessel in the EEZ. No action has been taken by the Mozambican authorities in respect of such non-compliances.

However the issue should be also considered in the context of difficulties in the national capacity for Monitoring Control and Surveillance. The MCS operations unit in the MoF has limited capacity, and has experienced problems in relation to both hardware and software, as well as human and financial resources.

It has had some difficulties maintaining a full-time operational service. Furthermore, the EU VMS uses a different system (Argos). Although the procedure to make this compatible with Inmarsat appears to be simple and straightforward, the MoF has not taken the initiative in arranging this with EU vessel operators.

#### **3.4.2 *Catch declarations***

There has been no take up of licences for deep-water shrimp, and therefore no catch declarations have been required. EU tuna vessels are required to submit catch declarations to the Ministry of Fisheries with a copy to the EC Delegation in Maputo after each fishing period. In the case of tuna vessels (purse seiners and SLLs) this should be sent within 45 days of the vessel departing from the EEZ, and should be submitted by all vessels issued with a licence, “*even if they have not engaged in any fishing activities*”. Surface longliners which took up licences have indicated that they have not entered the EEZ. The Agreement is silent in the event that the EEZ is not entered by a licensed vessel.

Purse seine vessels have completed catch declarations, but the consultants could find no evidence that they had been submitted directly to the Mozambique authorities with copies to the EC Delegation. In all cases, catch declarations appear to have been submitted first to the Member State concerned, reviewed by relevant Member State institutions and then forwarded with collated data to the Mozambique Authorities via the EC Delegation. As a result the catch declarations are not received until a considerable time after the fishing period concerned. At the time of the mission no catch data from the 2005 fishing season (which ended in March 2005) was available. In addition, the catch data (in the case of 2004, from French vessels) is not always clearly disaggregated by species, as required by the forms set out in the Annex to the protocol.

These omissions can be regarded as breaches by some EU tuna vessels of the terms of the Protocol. However, although the Mozambique authorities would have been within their rights to respond by suspending fishing licences or refusing to renew them, they have not done so.

In 2004 surface long line vessels submitted catch declarations in accordance with the Agreement, but only to the Member States, where the figures were then collated and forwarded to the Mozambique authorities.

#### **3.4.3 *Additional licence payments***

Additional duty payments were made by 21 purse seine vessels in respect of catches in excess of the 120 tonnes/vessel corresponding to the advance on the licence fee. These followed the procedure set out in the Agreement, and were calculated on the basis of annual catches verified by Member States. No problems were experienced with these procedures.

#### **3.4.4 *By-catch***

Bycatch requirements are not relevant since there is no activity of deep shrimp trawl segment.

#### **3.4.5 *Infractions of fisheries regulations***

No formal infractions by EU vessels of national fishing regulations have been registered by the Mozambique authorities. However there is concern that EU purse seine fishing takes place on sea mounts close to the boundary of the Quirimbas National Park in the north of the EEZ.

#### **3.4.6 *Fish landings***

The Agreement does not include any pre-condition for fish landings in Mozambique from purse seine and long-line vessels. These segments undertake their activity without any physical contact with Mozambique ports.



### 3.5 MOZAMBIQUE COMPLIANCE WITH PROVISIONS OF THE PROTOCOL

#### 3.5.1 *Licensing procedures*

Spanish surface longline vessel operator stakeholders argue that the system for the issue of fishing licences takes too long. It is claimed that the license is received only some 4 to 5 months after the initial request, which the operators consider to be too long for maximum operational benefit. The majority of the delay is thought to be in relation to transmission of the licence request via the Commission to the Mozambique authorities and the resulting internal procedures. Examples were cited of vessels receiving licences too late for them to be utilised. Given that the sector needs to plan fishing areas in relation to potential catch rates, a more timely issue of licences would be more likely to result in actual fishing in the EEZ.

#### 3.5.2 *Planning and reporting of measures financed by the Agreement compensation*

The Agreement provides for an annual financial compensation of €4,090,000 to finance a range of fisheries measures. The Protocol requires the Ministry of Fisheries to submit an annual programme of the measures to be implemented using the funds allocated under the Agreement, and to submit an annual report within 3 months after the end of each year, along with the results achieved.

Specific budgets associated with the planned utilization of the financial compensation were reviewed by the consultants. However the annual plan does not appear to be linked to any overall strategic plan. The preparation of the annual plans and the reporting of the implementation activities and utilisation has been generally delayed due to weak capacity of the MoF internal systems for strategic and budgetary planning.

The 2004 report<sup>45</sup> was submitted by DNEP<sup>46</sup> on time in March 2005. The 2005 report had not been presented to the EU Delegation at the time of the mission. The Mozambique authorities have therefore not met their reporting obligations in relation to the use of the compensation in 2005.

#### 3.5.3 *Procedures for transfer and use of FPA Funds*

Community funds have been transferred (from the Commission to the Government of Mozambique) into an account held in the name of the Ministry of Planning and Finance with the Bank of Mozambique. They are then transferred in local currency to an account managed by Fisheries Development Fund (FFP) according to Mozambican budgetary system and terms of the EU Agreement. The EC Delegation and Commission report that there have been delays caused by slow communications of account numbers, but that otherwise no problems are experienced with the procedures.

As stated in the DNEP report mentioned above, the transfers, in relation to 2004, were made between June and December 2004 (€3,599,994.60, being €3,600,000 less €5.40 bank fees, plus €490,000.00) following submission of a request to the Commission. The actual financial transfers made are summarised in Table 50.

According to the same report €166,786.00 was retained by FFP for “Fundo de Bónus de Rendibilidade” (corresponding to a 5% administrative charge). The net amount available for target actions plus training and meetings in 2004 is estimated by the consultants to be €3,890,494.78. At least 5% of the targeted action funds are therefore allocated to activities other than those specified in the Agreement.

#### 3.5.4 *Activities undertaken*

The analysis of compensation funds by the evaluation is therefore limited to 2004. The 2005 annual report was not available during the mission. Table 51 shows the progress in 2004 towards the targeted action activities as set out in the protocol.

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<sup>45</sup> Relatório anual das acções realizadas e previstas no artigo 4º do protocolo 2004/2006

<sup>46</sup> National Directorate of Fisheries Economics

In general in 2004, the Mozambican authorities appear to have utilised only about 42% of the compensation funds available under the Protocol. In the key area of fisheries MCS, which is also supported by the SADC MCS project, only €232,425 (15.5%) were spent in 2004, from a total available of €1,500,000 (see Table 50). From the limited data available and anecdotal information provided by the Mozambican authorities, it appears that the same trend is observed with respect to 2005.

The reasons given for the lack of utilization of funds are difficulties and changes in project planning, difficulties in complying with EC procedures (i.e. preparation of plan and annual reports), administrative delays in national procedures (especially decision making with respect to a new Ministry building), and delays in receiving and transmitting EC disbursements.

There is an outstanding question regarding the utilisation of unspent funds. When there is a remaining financial balance, national financial regulations require that it must be declared to the Treasury at the end of the year. In 2004 and 2005 the Treasury reports that it has not been made aware of the unutilised amounts in respect of compensation from the EU Mozambique Fisheries Agreement. It is reported by the Ministry of Fisheries that unspent funds are retained for specific actions such as the purchase of a patrol vessel and construction of the new Ministry of Fisheries. However, the mission had no means of confirming this.

Furthermore in the DNEP Report 2004 it is clearly stated that some actions (e.g. institutional development and quality control) had been reprogrammed, and budget resources allocated to other (unspecified) actions: “*expenditures budget has been reprogrammed and remaining resources have been used in actions with insufficient budget*”. The consultants were unable to determine the precise utilisation of the funds.

Given the apparent underspend of compensation on programmed activities, the lack of any returns to the Treasury, the claims regarding unspecified re-programming of expenditure, there is a risk that some of the 2004 financial compensation under the Agreement may have been used to support off-budget expenditures.

It is noted that other donors<sup>47</sup> have also concluded that “the Directorate of Economics within the Ministry consists of mainly junior staff and requires substantial upgrading to become an effective unit” and that “The Fisheries Development Fund (FFP) is internally managed and does not offer a high level of accountability as may be required for a donor funded project”. In the FFP 2004 report<sup>48</sup> it is noted that the current budget for fisheries is quite insufficient and that fishery sector institutions often “use projects from PTIP<sup>49</sup> to assure current expenditures”.

There is a clear need for the introduction of improved financial auditing routines, including the use of strengthened planning, budgetary and counter-signing procedures to ensure a more transparent and sustainable system of disbursement. Any future FPA should address the issue of strategic and budgetary planning and accountability to ensure that financial compensation is directed to the optimal benefit of the sector development.

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<sup>47</sup> Norwegian College of Fisheries Science, Technical Evaluation of the Report on Monitoring Control and Surveillance for Mozambique, May 2003.

<sup>48</sup> Relatório Fundo Fomento Pesqueiro, 2004

<sup>49</sup> Triennial Program of Public Investment.

Table 50: Financial transfers received by the Government of Mozambique under protocol (2004)

Project code	Project name	Budget	Bank fees	Net amount	FBR (5%)	Executed	% exec.
		€				€	
PES/04/006	Monitoring marine fisheries	1,500,000.00	1.80	1,499,998.20	74,999.91	248,451.00	16.6
PES/02/005	Institutional Development (MF)	1,000,000.00	1.80	999,998.20	49,999.91	752,105.00	75.2
PES/96/015	Research	1,000,000.00	0.00	1,000,000.00	50,000.00	599,752.00	60.0
PES/04/005.1	Training support for the MoF	350,000.00	0.00	350,000.00	17,500.00	0.00	0.0
PES/96/012	Quality control	100,000.00	1.80	99,998.20	0.00	48,800.09	48.8
Participation in Joint Committee and other international meetings		60,000.00		60,000.00	3,000.00	55,754.00	92.9
Training		80,000.00		80,000.00	4,000.00		
<b>Total</b>		<b>4,090,000.00</b>	<b>5.40</b>	<b>4,089,994.60</b>	<b>199,499.82</b>	<b>1,704,862.09</b>	<b>41.7</b>

Source: DNEP

Note FBR= "Fundo de Bónus de Rendibilidade"

Table 51: Targeted Actions and under the 2004/2006 protocol

Targeted action described in formal report	2004 funds available	% execution	Consultants Observation on Progress
1. Monitoring marine fisheries	1,500,000.00	15-16	Budget execution for planned MCS actions amounted to only to 15 %. This should be seen in light of difficulties in the national capacity for MCS, including problems in relation to both hardware and software as well as human resources. The installed VMS system, covering the industrial and semi-industrial fleet, is currently not functioning due to technical and contractual issues. The MCS operations unit in the Ministry of Fisheries does not appear to be a permanently functioning unit, seriously limiting its effectiveness and efficiency. The purchase of a much needed patrol vessel is still pending due to bureaucratic procedures. There appears to be a lack of interest in purchasing or chartering the Eagle Star (converted fishing vessel used in joint operations in the MCS-SADC programme). Although relevant, this component appears to be ineffectively deployed. See more detailed breakdown in Table 52.
2. Institutional development (Ministry of Fisheries)	1,000,000.00	71-75	About 42% (420,000€) of the budget was initially directed to the financing of Ministry of Fisheries new building since the current location is unsuitable. However until now there has been no decision regarding the siting of a new office building, and uncertainty and delays in administrative procedures to be followed. Three quarters of total amount has been spent on other items, such as vehicles, computers and office equipment. Therefore the objective of construction of new building seems to have been compromised. Overall the impact of institutional strengthening is difficult to evaluate. However the institution has been strengthened to an extent in its infrastructure and capacity to support human resources activities.
3. Research	1,000,000.00	59-60	Budget execution for planned actions amounted to 59%, which was comparatively more successful than other targeted actions. Most of the expenditure concerned investments in infrastructure and equipment in order to strengthen the presence and scientific capacity at the provincial level. Thus, this can be considered a much needed strengthening of institutional capacity for scientific purposes, including the extended coverage of data from the artisanal fisheries.

Targeted action described in formal report	2004 funds available	% execution	Consultants Observation on Progress
4. Training	430,000,00	Nil	There have been no specific requests submitted to the Commission for funding under this action. Activities in this area are extremely delayed and this component is unutilised. In 2005 the M.F started negotiating this specific measure towards developments in Fisheries School at Matola. Activities seem to be starting in 2006 with planning of building refurbishments. In 2005 the Ministry commenced payment of salaries for some teachers and some equipment was purchased. However the functioning of the training institution is weak and does not meet the requirement for a modern vocational fisheries training institution. The involvement of ICEIDA in 2006 in fisheries training has potential to bring a high degree of focus on the activities, objectives and future course content, thus creating leverage within this component.
5. Quality control	100,000.00	48,8	Funds utilised were mainly used for strengthening capacity of the INIP and provincial delegations (with equipment refurbishments and acquisitions). Funds not utilised are intended to be used for laboratory supplies (chemicals and other consumables) according to INIP Director. Utilisation of about half the budget can be apparently explained to the fact that part of the laboratories only started functioning during and in the end of 2005. Laboratories were being finalised and staff receiving training.
6. Participation in Joint Committee and other international meetings	60.000,00	93	Disbursed following specific requests to the Commission. High level of execution due to participation in several international meetings.
<b>Total</b>	<b>4,090,000.00</b>	<b>42</b>	

Note that the Protocol requires that amounts referred to at (4) and (6) should be paid as and when the Ministry of Fisheries requests them from the Commission of the European Communities for the purpose of covering the projected measures.

Table 52: MCS execution in 2004

Programmed actions	Executed actions	Estimated	Executed	%
		€		
Elaboration of a plan on shrimp fishing	Workshop	16,806.00	5,688.00	33.8
Fiscalisation actions in Sofala province	Improvement of fiscalisation monitoring system	2,718.00	2,588.00	95.2
Work visits in the provinces of Zambezia, Sofala, Nampula and Tete	Procedures harmonisation	23,878.20	10,490.00	43.9
Transportation equipment purchase	6 vehicles (2 for provinces, 4 for head department)	650,700.00	137,616.00	21.1
Informatics equipment purchase	6 PC, 2 printers, and other equipment	240,259.00	7,490.00	3.1
Office furniture purchase	Office furniture for DNAP and province departments	299,446.00	29,946.00	10.0
Services and equipment purchases for fishing Administration	Repair and maintenance of equipment; communication systems and other materials for fiscalisation activities	266,191.00	14,603.00	5.5
"Bonus"			23,994.00	
<b>Total</b>		<b>1,499,998.20</b>	<b>232,415.00</b>	<b>15.5</b>

Source: "Relatório anual das acções realizadas e previstas no artigo 4º do protocolo 2004/2006", MoF, March 2005.

### 3.5.5 Licence income

In addition to financial compensation, the GoM has received advance licence fees paid by EU vessels, additional licence payments from vessel owners, and payments from the Commission in respect of catches in excess of the reference quantity. The Agreement brings financial benefits of just under €4.7 million to the GoM. The breakdown by source of the financial benefit in 2004 is shown in Table 53.

Table 53: Revenues derived from the Mozambique EU agreement

2004	
Licences	114,000
Extra-tuna catch payments	132,250
<b>Sub-Total Vessel Contributions</b>	<b>246,250</b>
Financial compensation	4,090,000
Financial compensation (Extra-tuna catch)	138,750
<b>Community contribution</b>	<b>4,228,750</b>
<b>TOTAL</b>	<b>4,675,000</b>

Source: Relatório anual das acções realizadas e previstas no artigo 4º do protocolo 2004/2006

Note that for catches in excess of reference quantities in 2004, additional payments were made by the vessel owners and the Commission. These are fully not represented in Table 54 since they had not been

registered on the FFP account at the time of the report. Actual additional payments due were estimated at €241,027.5. It should also be noted that a payment by the EC of €18,162 in respect of catches made by an Italian vessel (which was fishing erroneously in the Mozambique EEZ) was not approved.

### 3.5.6 Revenues from the EU-Mozambique fisheries agreement in the context of other sources

The Ministry of Fisheries receives revenues from four main sources. The Consolidated fund (state budget), donor projects, the EU fisheries agreement, and direct licensing of vessels (foreign and national) and associated fines and incomes (e.g. hygiene inspection fees). The policy of the Government is that the Ministry of Fisheries should be largely self financing. As far as the consultants are able to determine, the state budget supports only the salaries of the MoF staff. Operational and investment costs are substantially covered by income from non-state sources.

Table 54 shows income associated with the Agreement, in the context of income from some other external sources. In terms of the overall contribution towards the fisheries income, the Agreement in 2004 contributed about 50-60% of the total fishing revenues received by the Ministry of Fisheries. Other sources of finance are the consolidated fund and donor projects. The consultants were not able to quantify incomes related to the former, but it is thought to be minimal. Donor projects are expected to contribute about €10.3 million of grant and a further €7.2 million finance to the Ministry of Fisheries in 2006. Other fishery incomes contribute about €3.5 million, suggesting that the FA currently contributed about 16% of Government expenditure on fisheries in 2004.

**Table 54: All fishing revenues (excludes donor provision)**

	2001	2002	2003	2004	2005 (est.)	2006 (foreseen)	TOTAL	Annual Average
	€ '000							
Fishing licences	1,940.42	2,724.68	2,186.01	3,055.62	3,810.21	3,724.84	15,033.58	2,505.60
Tuna licences (royalties)	1,344.88	1,213.60	935.35	847.15	935.26	942.16	5,039.71	839.95
Inspection fees	0.00	17.80	22.83	59.38	179.79	186.49	441.75	73.63
Fines	211.69	42.31	164.88	27.05	0.00	0.00	318.82	53.14
Sub-Total Vessel Contributions	3,496.99	3,998.39	3,309.06	3,962.14	4,925.26	4,853.49	20,833.86	3,472.31
Financial compensation (EU)*	0.00	0.00	0.00	3,606.75	3,526.17	3,501.06	10,116.27	3,372.09
	<b>3,496.99</b>	<b>3,998.39</b>	<b>3,309.06</b>	<b>7,568.89</b>	<b>8,451.43</b>	<b>8,354.55</b>	<b>30,950.13</b>	<b>6,844.40</b>

Source: Direcção Nacional de Economia Pesquera (DNEP) and consultant's calculations

\* Note that the totals are less than the compensation in the Protocol due to i) administrative costs (FBR) deducted by the FFP and ii) incomplete utilisation of the training and travel budgets paid directly by the European Commission

In the case of any significant reduction or disruption of the compensation under the Agreement, the financial situation of FFP for disburseable funds would become less secure. This is especially so since the FFP 2004 report indicates that in order to execute the development program under the Fisheries Agreement, the FFP has negotiated a loan with *Banco Comercial e de Investimentos*, to facilitate cash flows associated with the targeted actions. The details were not available to the mission.

Recurrent expenditure represents some three quarters of the whole budgeted FFP expenditures (79% in 2003, 74% in 2004), suggesting that the Ministry relies heavily on FFP finance for operational effectiveness.

### **3.6 STAKEHOLDER ASPIRATIONS**

The summary of stakeholder aspirations in relation to the EU Fisheries Agreement is shown in Table 55.



Table 55: Stakeholder Aspirations and Issues

Aspirations	Concerns
<b>Government of Mozambique</b>	
<p>Renewal of the Agreement with main focus on deepwater shrimp fisheries.</p> <p>Sustaining budgetary provision to the Ministry of Fisheries</p> <p>Increase in national benefits derived from the Agreement including development of joint-enterprises to develop fishing activity and fishery sector in Mozambique.</p>	<p>Possible loss of FA financial compensation due to agreement without deepwater shrimp opportunities.</p> <p>Lack of viable alternative options for utilisation of deepwater shrimp fishery.</p> <p>Feasibility of direct licensing of tuna and SLL vessels if the Agreement is not renewed.</p> <p>Impact of budget reductions due to possible non-renewal scenario, increasing dependency on donor support (mainly NORAD and ICEIDA) and private license fees</p>
<b>Mozambique Industrial / Semi-industrial / National Charter / Small scale fishers and processors</b>	
<p>Maintaining access to EU market for products from small and medium scale fisheries.</p>	<p>Impact of IUU fishing on coastal resources especially (encroachment of industrial fisheries inside 3 mile zone).</p> <p>Lack of direct benefits from the EU fisheries agreement.</p>
<b>Various Foreign Joint Ventures</b>	
<p>Maintaining access to EU market for products from industrial fisheries</p>	<p>Maintaining profitability in relation to coastal shrimp fisheries</p> <p>Lack of direct benefits from the EU fisheries agreement.</p>
<b>Various Foreign Longline Vessels (mainly Japanese)</b>	
<p>Maintaining access to EEZ for longlining for tunas</p>	<p>Excessive exploitation of bigeye tunas, and impact of management measures</p> <p>Impact of IUU Fishing</p>

Aspirations	Concerns
<b>EU longline fleet</b>	
Renewal of the agreement on current terms or with increase of fishing opportunities. Spanish stakeholders believe that around 30 Spanish vessels could be interested.	Loss of Agreement will imply private agreements with Mozambique authorities, with concern over weak management capacity and increased cost of licences, rendering fishery not viable.
<b>Spanish and French Purse seine fleet</b>	
Renewal of the agreement on current terms; possible increase in reference quantity	Loss of Agreement will imply private agreements with Mozambique authorities, with concern over weak management capacity and increased cost of licences (current USD18000/year) rendering fishery not viable.
<b>Spanish and Portuguese trawl fleet</b>	
Viable fishing opportunities for demersal fishery resources	Agreement is not relevant to the need for access to resources which can be exploited economically
<b>European Commission</b>	
Continued access for EU vessels Maintaining fishing in a responsible and sustainable manner Supporting sustainable development benefits to Mozambique	Weak institutional capacity for management of FPA budgetary support programmes. Non-compliance with EEZ reporting and catch declaration requirements by EU vessels (purse seine and surface longliner) Resource and environmental impacts of surface longline fishing (on sharks and turtles)
<b>EU processors and marketers</b>	
Continued and reliable supply of product of good quality at competitive prices	Possible disruption to trade due to non-compliance with health conditions arising from 2006 FVO mission from DG SANCO.
<b>EU consumers</b>	
Continued and reliable supply of product of good quality at competitive prices	Concern over sustainability of resource and environmental impacts

### 3.7 CONTEXT AND INTEREST IN THE FPA

#### 3.7.1 *Interest in an FPA*

The Government of Mozambique terminated a 5-year Fisheries Agreement with the European Community in 1993. The present Agreement was signed in 2003, and came into force in 2004. The principal interest of the GoM is to retain the deepwater shrimp fishery within the scope of the Agreement, since this accounts for some 85% of the compensation attributed to the Agreement. However the market conditions are weak for the species of deepwater shrimp concerned, exploitation costs are high, and the fishery appears to be viable only when pursued on a seasonal basis by locally based vessels with access to regional shallow water shrimp resources. The removal of this element from the Agreement, due to the non utilisation of these fishing opportunities, would therefore clearly impact on the interest of the GoM to enter into an Agreement.

On the other hand, tuna fishing opportunities appear to be highly feasible, with almost all opportunities utilised and 21 vessels out of 35 licensed in the purse seine sector paying additional licence fees in 2004. Although it appears that there has been no fishing by surface longliners in the Mozambican EEZ, the uptake of licences has been good. Vessel owners are interested in holding licences in case of the need to pursue the exploitation of migratory resources of swordfish and sharks (being the main target species) within the Mozambique EEZ. In fact in 2006, SLL vessel owners report the likelihood that this fishery will be pursued within the EEZ. It would seem that should the Government of Mozambique so wish, there is a feasible option for renewal of the Agreement, based on purse seine and surface longline opportunities.

It is clear that an Agreement with a purse seine and surface longline only option would entail a significant reduction in the compensation. To an extent this may be offset by a modest increase in purse seine opportunities, and/or an adjustment of reference quantities, and a more realistic pricing of the longline fishing opportunities. However, the compensation of a renewed FPA will be unlikely to exceed more than 4 to 5% of the income of the Ministry of Fisheries from donor funding and other fisheries incomes.

Another clear potential advantage to the GoM of entering into a Fisheries Partnership Agreement, albeit with reduced scope, is related to the need for improved strategic and budgetary planning. Strategic management of the fishery sector is weak, policy formation mechanisms are not clearly defined and are not transparent, budgetary allocations are not linked to sectoral policies, and elements of the fisheries related expenditure appear to be off-budget. The FPA approach, which would link budgetary support to the submission of a fisheries sector strategy with a clearly structured budget in the form of a mid-term expenditure framework, could be expected to accelerate the development of an improved institutional capacity for sectoral strategic management. The application of such a discipline is clearly in the interests of Mozambique.

#### 3.7.2 *Impact of the EPA process*

It is reasonable to say that the trade effect of the EPA will be phased over several years, starting in 2008. It is likely that in the short term the impacts will fall more on the domestic market rather than the export sector. This is because most ACP countries, including Mozambique, already have under- and un- utilized trade preferences with the EU. Thus, the EPA will place European imports as a major competitor against domestic production, as well as putting EU imports at an advantage relative to non-EU trading partners. In other words, there are potential trade creation and trade diversion effects from the EPA. The Community has indicated that it will consider providing support to cover the interim adjustment costs, and also that impact mitigation measures may be introduced within the EPA.

In the case of Mozambique, unless there is a substantial expansion of aquaculture, there is only limited potential for additional fishery sector trade. In the short term, EPA is therefore expected to have little direct impact on the fishery sector or the Fishery Partnership Agreement process. The EPA has no short term potential to ameliorate any loss of national income that may arise due to a change in the dimensions of a Fisheries Partnership Agreement between the Community and the partner state.

### 3.7.3 *SWOT Analysis of the Fishery Sector*

The following table illustrates the strengths, weaknesses, opportunities and threats facing the Mozambique fishery sector.

Table 56: Strengths, weaknesses, opportunities and threats facing the Mozambique fishery sector

<i><b>Strengths</b></i>	<i><b>Weaknesses</b></i>	<i><b>Opportunities</b></i>	<i><b>Threats</b></i>
<b>Resources and environmental considerations</b>			
Valuable resources of shallow-water shrimp and tuna; apparently stable resources of deep-water shrimp	Poor knowledge concerning demersal fish stocks (of low value in international markets); lack of reliable assessments of most stocks (except shallow-water shrimp), including tuna, swordfish and sharks; lack of an observer programme	Development of deepwater demersal fish fisheries (unknown potential and only limited exploitation)	Excessive fishing effort on shallow-water shrimp may cause long-term negative changes to the demersal community (not a research topic)
	Shallow water shrimp fisheries fully or over-exploited (overcapacity estimated at 40%); seasonal closures in place. Lobster fishery has been closed due to over-exploitation	More effective fisheries management will improve yields and profitability, as well as economic rent to the country	Regional depletion and/or extinction of turtles (by-catch in long line and trawl), sharks (targeted long line and artisanal fishery); high by-catch and discard rates in shrimp trawl fishery may permanently alter benthic ecosystem in trawlable areas
	Weakly developed IOTC monitoring and management measures:  IOTC advice indicates a decrease in catches of juvenile bigeye, in particular, in the FAD fishery)  Possible depletion of sharks and localised depletion of swordfish in the SWIO area	Relatively stable catches of shallow-water and deep-water shrimp and increasing catches of tuna	Management measures to limit fishing mortality of juvenile bigeye tunas, especially in relation to FAD fishing.
	High level of IUU fishing within the region		Damage to coral, seagrass bed, and mangrove (fuel for artisanal fish processing / clearing) habitats with impacts on artisanal and industrial fish and shrimp fisheries and biodiversity.

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
<b>Institutional framework</b>			
Adequate institutional basis for fisheries administration exists within MoF.	Weak MCS capacity and enforcement capacity in coastal waters and the EEZ;	Strengthened fisheries administration will improve national benefits derived from the fishery sector through improved productivity and yields	Dependency on external funding sources threaten medium & long-term institutional sustainability
Fisheries recognized as an important financial source. The sector is considered to be able to auto-finance the fisheries administration	Lack of fisheries management capacity to ensure sustainable fishing, in particular with respect to overcapacity in the shallow-water shrimp fishery; inland waters poorly covered.	Proper structure of financial incentives for surveillance agents will reduce vulnerability to corruption and improve enforcement	
Substantial level of donor support for the fishery sector	Non-transparent license system, not based on economic rationale (licenses holders may be ex-combatants and ex-vessel owners without any vessels)	Establishment of an observer programme through funding from the EU or NORAD	Poor database structure and management, which may lead to erroneous and unreliable indicators
Qualified fisheries research personnel and clear research priorities concerning key stocks; excellent quality of assessment of shallow-water shrimp	Lack of capacity (and reluctance) to consider wider environmental issues such as the effects of fishing and bycatch/discard issues; problems in coping with the amount of logbook data	EU FA targeted action for research continues to have an important positive impact on research activities (surveys & sampling)	Research institute is heavily dependant on external funding even for salaries, jeopardising its functioning
EU-compliant sanitary control (list 1) promotes export-led investment and development, inclusively benefiting the small-scale sector.	Weak capacity for strategic and public financial management; lack of effective donor coordination	Improved financial management through the implementation of the SISTAFE (IFMS, Integrated Financial Management System).	Loss of donor support, due to loss of confidence in sectoral strategic and budgetary management.
	No membership of any Regional Fishery organisations dealing with tuna resources		Failure to improve investment environment for fisheries will perpetuate stagnation and loss of opportunities.

<i><b>Strengths</b></i>	<i><b>Weaknesses</b></i>	<i><b>Opportunities</b></i>	<i><b>Threats</b></i>
<b>Legal and Institutional Framework</b>			
New fisheries technical regulation from 2003 consistent with international commitments	Fisheries framework law outdated and dysfunctional	New legislation could strengthen enforcement procedures and sanctions scheme	Discretionary procedures in applying enforcement measures undermine effectiveness
New rules on VMS established by REPMAR	Lack of MCS means and implementation capacity.	Improved economic yields through better control of fisheries in line with management recommendations.	Weak MCS capacity to bring sound cases limits effectiveness of legal system and fails to control IUU fishing
Robust environmental policy with strong integration of fisheries and marine and coastal ecosystems management and protection	Lack of uniformity of enforcement procedures results in dismissal of cases due to lack of evidence	Proposed training of judges by <i>Centro de Formação Jurídica and Judiciária</i> on fisheries legislation will improve controls	
Centre for Sustainable Development of Coastal Zones established	Outdated fine and penalty structures	Environmental policy will ensure improved management of fisheries, marine and coastal management and protection, and marine parks.	

<i><b>Strengths</b></i>	<i><b>Weaknesses</b></i>	<i><b>Opportunities</b></i>	<i><b>Threats</b></i>
<b>Fisheries operations</b>			
High level of foreign investment generates employment in industrial and semi-industrial fishing vessels	Weak marine culture, reflecting lack of national skilled manpower (especially captains, masters and engineers). Industrial and semi-industrial vessels depend on foreign skilled personnel (mainly Spanish, Portuguese and Cubans)	Supplementary supplies and income to the national sector from by-catch from national industrial shrimp fishers	Significant loss of government revenue due to reduction or withdrawal of EU FPA due to non-utilisation of deepwater shrimp fishing opportunities.
Strong coastal fisheries culture in local fishing communities; artisanal fisheries have significant impact for protein supply and poverty alleviation.	Artisanal sector undercapitalised due to lack of viable market, resulting lack of input supplies	More effective national utilisation of offshore resources (tunas, billfishes)	Continued lack of investment and stagnation due to undercapitalised national operators, inadequate management and limited capacity for access to international markets
Fishing companies investing in maintenance and repairs facilities (in particular in Beira), which could also receive in the long/medium-term foreign vessels operating in the zone (including tuna vessels).	Lack of infrastructure limits access of artisanal sector to international markets limits financial inputs for development.	Improved business climate and investment in small scale fishery and processing can extend trade benefits to small scale fishers	
Some investments directed at exporting from artisanal vessels catching shrimp and fish	Low and limited viability of the industrial trawl fishery for deepwater shrimp fisheries provides disincentives for EU and other international stakeholders in Mozambique		
	Adverse investment and business environment (World Bank rating 110th out of 155 countries reviewed for ease of doing business); slow pace of structural reforms.		



<i><b>Strengths</b></i>	<i><b>Weaknesses</b></i>	<i><b>Opportunities</b></i>	<i><b>Threats</b></i>
<b>Marketing and processing</b>			
Good range of species with high demand on international markets (EU and Regional)	Poor condition of national infrastructure (roads, air connections, landing sites, ice supply, cold storage) limits development of internal and external markets.	Improved sanitary controls will open export markets and sources of finance for development of small-scale fisheries	Continued lack of investment in access infrastructures undermines potential private investment in the sector.
Well established regional and international markets with strong demand	Weak local market demand in rural areas (with no weighing, species or quality differentials in prices).	Development of new national processing and market systems for fish distribution will improve food security and nutrition	
Compliance with sanitary controls permits access to international markets (processing companies and vessels)	Significant competition from regional suppliers of small pelagic fish		
High local market demand in main urban areas, although with weak weighing, species or quality differentials in prices.			

### 3.8 ECONOMIC AND FINANCIAL IMPACTS

#### 3.8.1 Methodology

The methodology used for the calculation of the value added considers the intermediate consumption of the vessels through an investigation of their cost structure. This draws substantially on the results of the Study “The European Tuna sector Economic Situation, Prospects and Analysis of the Impact of the Liberalisation of Trade” conducted by the Consultants under Specific Convention No.12. The approach to the calculation is shown in the Figure 15 below.

The first stage account of value added represents the gross value generated by the utilisation of labour and capital. The second stage account is the earnings before depreciation, interest and taxes (EBDIT). This amount is the difference between total sales realised and all the costs required to generate such sales. Costs of sales include the labour costs, and taxes including access costs (the license) as well as the port charges. The EBDIT represents the amount destined to finance and remunerate investment capital (depreciation and loans). Depreciation and finance charges cannot be reasonably estimated owing to the heterogeneity/diversity of the fleet, taking into account the sizes of the vessels, age, different financing and depreciation methods used by each one. The study is therefore limited to the estimate of the gross value added and its constituent parts and does not account for the financial charges on each vessel.

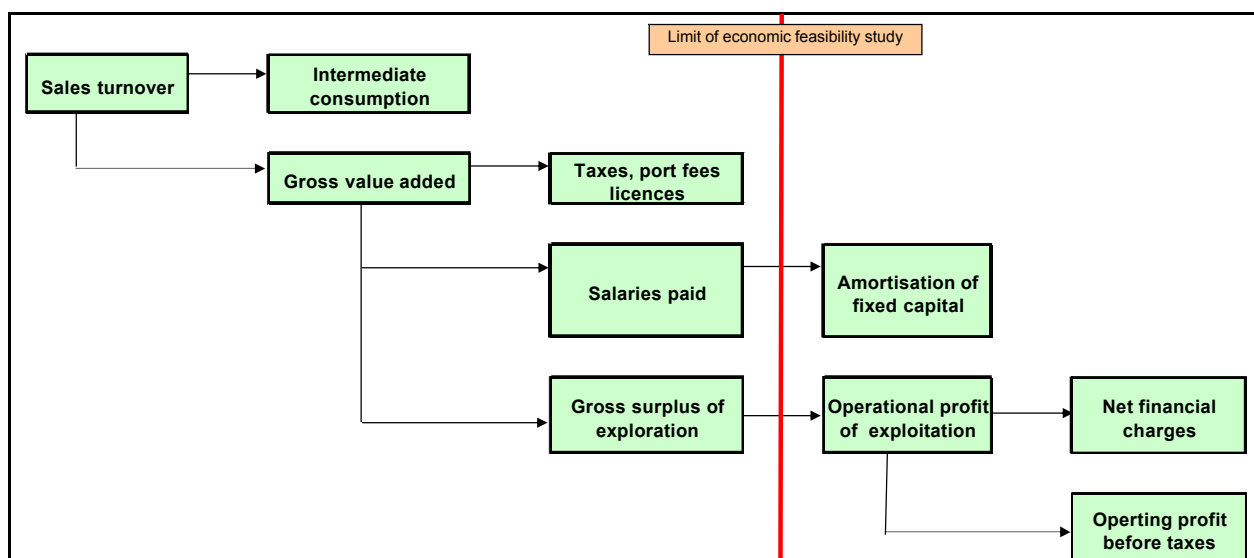


Figure 15: Principal costs and intermediate balances in consumption by EU purse seiners

The data regarding the operating accounts of the EU vessels has been obtained:

- From interviews with vessel operators in the sector undertaken through the Specific Convention No.12 Contrat FISH 2003/02) which has been reviewed by the study steering committee.
- From scientific sources, regarding catch compositions, especially in relation to the Concerted Action Study “Economic Performance of Selected European Fishing Fleets” 2004.
- From discussions with fleet stakeholders

The vessel accounts are expressed in terms of the principal costs elements expressed as percentage of sales, and assuming an operating profit margin of 10%. These accounts have been updated by applying a modest factor to account for price developments since 2005, principally in relation to fuel costs.

### 3.8.2 Fish Prices

The average prices obtained by EU vessels during the period of the Agreement, and used for the analysis are shown in Table 57.

**Table 57: Average prices of target species obtained by EU vessels during the period of the Agreement**

	Average price (€ per tonne)	
	2004	2005
<b>Purse seine species</b>		
Yellow fin tuna	860	989
Skipjack tuna	540	621
Bigeye tuna	680	782
<b>Longline Species</b>		
Swordfish	5,430	5,430
Sharks	890	890
Yellow fin tuna	4,750	4,750
Albacore tuna	4,750	4,750
Bigeye tuna	4,750	4,750
VARIOUS	4,750	4,750

During the period the main feature is a slight increase in the prices of the purse seine catches, with yellowfin and skipjack tunas assumed to be 15% between 2004 and 2005. The 2004 catches were exceptional in several respects, with a higher catch rate and increased catches of yellow fin tuna. At the time of the mission there was no catch data from 2005. In order to ensure that the evaluation is more representative of the fishing during the period of the Agreement, the consultants have assumed a lower level of catches for 2005 and a different catch split, as follows.

**Table 58: Tuna catches breakdown for 2004 and 2005 in the Mozambique EEZ**

Species	2004 (actual)		2005 (estimated)	
	tonnes	%	tonnes	%
Yellow Fin Tuna	8,683.2	72	2,070	38
Skipjack Tuna	3,256.2	27	3,256	56
Big Eye Tuna	120.6	1	121	6
TOTAL	12,060	100	5,446	100

For the purpose of the economic evaluation of the Agreement, the average prices of the catch have been calculated on the basis of the catch composition separately for 2004 and 2005, due to the high proportion of yellowfin caught in 2004. In 2004 (based on an average catch composition of yellow fin tuna 72%, skipjack tuna 27% and bigeye 1%) the average catch value from this segment is estimated to be €772/tonne. In 2005 the average price is estimated to have remained almost the same (€771/ tonne), mainly because although the proportion of high valued yellow fin decreased, as noted above prices for all species increased.

The catches of the EU vessels are derived from actual declarations in the case of the 2004, and are estimated in the case of 2005 (catch declarations were not available to the mission). Total Indian Ocean catches are only available for 2004. For 2005, the catches are estimated on the basis of the 2004 catches factored for the additional yellowfin catch caught in free swimming schools, as shown in Table 58.

It should be noted that 846 tonnes of the tuna caught by EU vessels in 2004 is considered by the Commission to have been caught outside the Agreement<sup>50</sup>. However, for the purposes of the economic evaluation, this tuna is considered to have been caught within the Agreement, since were it not for the administrative conditions applied, it would have been considered to have been included.

### **3.8.3 Presence of the fleet in the Mozambique EEZ**

The rate of presence of the EU vessels in the Mozambique EEZ is estimated as the ratio of the declared catches in the EEZ as a proportion of the total catch of the EU vessels fishing in the Indian Ocean. This is estimated to be 4.6% in 2004 and 2.1% in 2005. It is notable that the 35 purse seine vessels which took licences in 2004, represent the entire EU purse seine fleet operating in the Indian Ocean. However, this has since increased due to the transfer of some vessels from the Atlantic operations.

## **3.9 ECONOMIC AND SOCIOECONOMIC IMPACTS**

### **3.9.1 Overview**

During the period 2004 to 2006, the principal EU beneficiaries of the Agreement were the EU tuna purse seine vessels operating in the Western Indian Ocean, who fish under the Agreement as part of a regional fishing pattern in which they follow the migratory patterns on the main target species, these being skipjack and yellowfin tunas.

The principal benefits to Mozambique are in the form of the compensation and the licence income generated by the Agreement.

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<sup>50</sup> It was caught by an Italian vessel, whose licence application was not received by the European Commission due to an administrative error.

### 3.9.2 *Sales value generated*

The sales value of the fishery products generated by the EU vessel operating under the Agreement is estimated at €9.3 million, falling to an estimated €4.2 million in 2005.

### 3.9.3 *Added value*

The value added contributed by the Agreement is the difference between the sales value and the intermediate consumption. It includes salaries, taxes and profits from the fishing activities, and the licence fees generated. The direct value added is estimated to be €4.5 million in 2004 and €1.9 million in 2005.

Note that the value added generated under the agreement should be supplemented by the up-stream and down-stream multipliers in vessel inputs and processing. These are estimated to be 35%<sup>51</sup> of the gross value added from the fishing, corresponding to €1.5 million in 2004 and €0.6 million in 2005 (average €1.0 million). None of this is attributable to the Mozambique; it will be shared between EU and other ACP countries, notably Seychelles, Madagascar and possible Kenya. However it is not possible to allocate this due to lack of data. The total value added generated from the Agreement was therefore €6.0 million in 2004 and €2.6 million in 2005.

In terms of the allocation of the Value Added between the Community and the partner state, about 93% of the VA was attributable to the EC in 2004, and 92% in 2005. Value added attributable to Mozambique is limited to the licence fees paid by vessels, including the additional licence fees in 2004. There are no other direct revenues for Mozambique (for example crew wages) and also no indirect revenues (processing industry, vessel repairs and servicing, etc).

### 3.9.4 *Costs and benefits*

In terms of the costs and benefits of the Agreement to the Community in 2004, €1 Euro invested through the Agreement was estimated by the consultants to have generated a return of €0.95. This is low due to the non-utilisation of SLL and shrimp opportunities. In 2005, due to the decline in the tuna catch, the cost benefit ratio fell to 0.43. Over the two years of the Agreement evaluated, the average cost/benefit ratio was 0.70.

The direct benefits to Mozambique amount to licence revenues estimated at €316,500 in 2004 and €155,650 in 2005. However, in addition Mozambique has benefited from the transfer of compensation corresponding to a programme of targeted actions. Overall the benefits to Mozambique have been €4.7 million in 2004 and €4.2 million in 2005, averaging €4.5 million. This does not include any opportunity cost associated with alternative utilization of the fishing opportunities subject to the Agreement (such as the sale of private licences). However, it is evident that 35 tuna vessels would have generated a licence income of US\$630,000 (€533,400) suggesting that the net average annual benefits to Mozambique were in the region of €3.94 million/annum.

### 3.9.5 *Employment*

With regard to employment composition on board the EU vessels fishing under the Agreement, the Mozambique Agreement contributes to sustaining a total of 1,120 full time employees in 2004 and 2005 (both on board the EU purse seine fleet fishing in the Indian Ocean, and in downstream jobs in processing). These include jobs held by approximately 350 EU nationals mainly from the regions of Bretagne in France, and from the Basque country and Galicia in Spain, being the zones which represent the home ports of this fleet and the places where tuna processing establishments are located. The purse

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<sup>51</sup> Specific Convention 12 The European tuna sector economic situation, prospects and analysis of the impact of the liberalisation of trade

seine vessels also maintain employment for an estimated 700 ACP nationals, both on board and in processing establishments in Seychelles, Mombasa and Madagascar. However none of these only are of Mozambican nationality.

It should be noted that there is a substantial downstream employment in processing<sup>52</sup>, associated with the tuna caught by EU purse seiners. Tuna caught in the Mozambique EEZ is either a) transhipped for processing in either a Seychelles or an EU cannery, or b) landed directly in Seychelles for processing or c) landed in Mombasa for loining. However, the actual allocation of employment depends on the downstream distribution of the tunas caught in the EEZ. There is no specific data available on this and it is difficult to determine the share of this employment which should be allocated to the Mozambique agreement.

About 1,328 persons were identified as being employed on the 38 vessels fishing under the Agreement. In principle, the Agreement should account for an average of about 3.3% of the employment benefits derived from the purse seine fleet (being the average level of presence of the fleet in Mozambique waters in 2004 and 2005), thus suggesting that the Agreement sustains some 38 full time employees, of which 14 are from EU and the balance from other ACP countries. None are from Mozambique.

An estimated 208 persons are employed on board the average of 13 longliners which take out licences under the Agreement. However, given that no fishing has been undertaken, the contribution of the Agreement to sustaining this employment is assumed to be nil.

#### **3.9.6 *Supplies to market***

The Community market has benefited from supplies of tuna totaling 12,060 tonnes in 2004. This is likely to have declined somewhat in 2005, to an estimated 5,446 tonnes. Assuming a supply of tuna for the EU market to be in the region of 800,000 tonnes per annum, the average supplies subject to the Agreement account for about 1.1% of the EU market.

The Agreement has not had any impact on supplies to the Mozambique market.

### **3.10 ENVIRONMENTAL IMPACT ANALYSIS**

#### **3.10.1 *Impact on target fisheries***

##### **3.10.1.1 *Deepwater shrimp opportunities***

No EU vessels have taken out licences for the deepwater shrimp fishery, and there has been no exploitation of this resource under the Agreement. The Agreement has therefore had no impact on this fishery.

##### **3.10.1.2 *Tuna purse seine opportunities***

Catches from the Indian Ocean tuna fisheries in relation to EU and other catches within the Mozambique EEZ are shown in Table 65.

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<sup>52</sup> Principally associated with the preparation and trimming by hand of cooked loins for canning

Table 59: Tuna catches within the Indian Ocean and the Mozambique EEZ.

Area	Year	Total	Yellowfin	Bigeye	Skipjack	Albacore	Swordfish	Other Billfish	Sharks
		tonnes							
Mozambique	2000	5,081	628	57	2,081	109	0	496	1,709
	2001	3,236	448	37	722	117	4	2	838
	2002	4,235	58	155	0	186	0	261	1,518
	2003	1,713	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	2004	14,781	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mozambique (avg)		5,809	378	83	934	138	1	253	1,355
IO_Western	2000	991,084	245,306	85,222	303,849	31,301	22,392	18,029	41,499
	2001	962,296	239,427	72,899	304,526	33,769	18,895	14,138	46,970
	2002	1,084,521	262,800	86,474	383,910	26,564	21,770	14,983	53,174
	2003	1,155,467	371,770	94,100	370,541	11,325	21,685	17,949	44,185
	2004	1,111,552	399,566	87,935	327,788	10,246	19,916	17,452	44,549
IO_Western (avg)		1,060,984	303,774	85,326	338,123	22,641	20,932	16,510	46,075
IO_Eastern (avg)		506,732	72,326	38,016	110,072	8,131	9,955	16,439	40,527
		%							
% of IO_Western		0.55	0.12	0.10	0.28	0.61	0.01	1.53	2.94
% of IO_Total		0.37	0.10	0.07	0.21	0.45	0.00	0.77	1.56

The Scientific Committee of the IOTC has not made any specific management recommendations for the skipjack stock. Impacts on this species by the EU fleet operating in the Mozambique EEZ are therefore considered to be minimal.

Juvenile bigeye tunas may be a significant incidental catch of the skipjack fishery pursued by purse seiners fishing on floating objects (FADs). In 2005, the IOTC adopted the Resolution 05/01 on conservation and management measures for bigeye tuna. Management measures are expected to be adopted May 2006, and will establish, for a three year period, interim catch levels for contracting parties catching more than 1,000 tonnes of bigeye tuna. The 2004 season was exceptional, as large catches of yellowfin were taken from free swimming schools and thus, less catches of juvenile bigeye. Considering the whole northern Mozambique Channel the normal pattern that would be expected is about 2,000-2,500 t of bigeye, or approximately 1 % of the purse seine catches in the region. The EU vessels fishing in the Mozambique EEZ may therefore be deemed to have only a minimal impact on the big eye tuna stock condition.

With respect to yellow fin tuna, the 2004 tuna catches of 12,060 tonnes reported in the Mozambique EEZ in 2004 were elevated due to the higher than usual proportion of yellowfin tunas caught, as noted above. Yellowfin thus accounted for an estimated 72% of the catch, whereas the normal fishing pattern would suggest 38% yellowfin. On an annual catch of 12,000 tonnes (corresponding to 2004 levels), this would account for up to 2,400 to 3,000 tonnes, corresponding roughly to 1% of the western Indian Ocean yield from this stock. Whilst not insignificant, the overall impact on the stock of the catches under the Agreement is relatively limited compared to other regional activities.

Whilst EU surface longliners have drawn licences, there has been no fishing by this segment within the Mozambique EEZ. The direct impact of the Agreement on the target stocks concerned (swordfish and sharks) is therefore zero. However, there are concerns regarding stocks of the species concerned. The Scientific Committee of the IOTC has concluded that the current level of the Indian Ocean swordfish catch (about 32,000 t) is unlikely to be sustainable in the longer term, and that this species may be locally depleted including in the Southwest Indian Ocean. However, there is no specific management advice at present. With respect to sharks, there is concern over the current high, but unknown levels of exploitation. IOTC has adopted Resolution 05/05 concerning the conservation of sharks caught in association with fisheries managed by IOTC. The Agreement contributes to the regional presence of the EU vessels targeting these species, and the impact of the Agreement on these stocks may become more significant if their utilisation by this segment develops in the future.

### ***3.10.2 Non-Target interactions***

#### ***3.10.2.1 Turtles***

Given the pelagic nature of the tuna and swordfish fisheries, the impact of the FA in relation to incidental catches of endangered species appears to be minimal. The EU longline fleet in the area is relatively small, and has not fished in the Mozambique EEZ in 2004 and 2005. Therefore the direct impact of the Agreement on these species is nil.

However, one potential exception is in the case of catches of turtles by longline. Given that Mozambique has known nesting areas for several endangered species of turtle (especially in the North of the country), and that turtle bycatch by the longline segment is an established problem in such fisheries pursued in other regions, there is a strong likelihood of an interaction between the EU vessels and some or all species of turtle, should these fishing opportunities be retained and utilised under a future FPA.

Thus, in future should the fishing opportunities be retained and utilised, there is a need to ensure that an observer programme is established to monitor the longline fisheries with a primary objective of establishing data on the nature and extent of the interaction. A secondary objective would be to gather



reliable data on the status of the swordfish and shark stock<sup>53</sup>. Whilst such a study should be implemented by the Government of Mozambique, it should cover all surface longline fleet segments.

#### 3.10.2.2 *Marine mammals*

There appear to no significant non-target interactions associated with the activities of the EU purse seiners. The only study reported (by Romanov, 1998) indicated no cetacean by-catch and one turtle caught in 108 sets by purse seiners. However it is notable that there is no reliable observer data on bycatch and discards from this fleet in this region. In the longer term it would be desirable to implement observer programmes to monitor and collect data on incidental bycatch by the European purse seine fleet.

#### 3.10.2.3 *Seabirds*

Concerning sensitive species of seabirds, there are no recorded interactions between seabirds and the EU fisheries. In other regions, seabird bycatch in surface longline fisheries can be a problem, but this is usually in waters much further to the south. Consequently, this is not considered to be an impact with respect to the EU-Mozambican FPA.

### 3.11 EX POST EVALUATION

#### 3.11.1 *Effectiveness*

What has been the contribution from the Agreement to the activities of Community fishery sector?

The 2004/2007 EU/ Mozambique Fisheries Agreement has been effective in providing fishing opportunities that permit the deployment of an annual average of 35 EU tuna purse seiners. However, these vessels also fish substantially in other EEZs and in international waters, and the level of dependency of these vessels on fishing activity in Mozambique was 4.6% in 2004. The Agreement can be regarded as less effective with respect to surface longline opportunities, where although an average of almost 12 out of the 14 available licences have been drawn, until now these vessels have not fished inside the Mozambique EEZ. However, the Agreement has served to support the Community's longline fishing activities in regional waters. The Agreement has not been effective in generating fishing opportunities for EU trawl vessels through the fishing opportunities provided for deepwater shrimp fishing. None of the licences available in this sector have been drawn.

The combined sector average annual value added resulting from the 1<sup>st</sup> Protocol to this Agreement is estimated at M€4.5 in fishing, plus an average of M€1.1 in up and downstream benefits (accounting for 26%). The direct Community benefits resulting from EU uptake Mozambique EEZ averaged M€4.2 m/year. All of the Community added value of the Agreement was derived from the tuna purse seine sector.

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<sup>53</sup> The IOTC has adopted the Recommendation 05/08 on sea turtles, which provides a number of mitigation measures to reduce the impact of fishing on sea turtles for both the purse seine and longline fishery as well as in general.

What has been the contribution from the Agreement to employment of Community fishers?

The Agreement has annually supported an estimated FTE equivalent of some 55 full time employees in fishing, of which 18 are from EU and the balance from other ACP countries. These include jobs held by EU residents mainly from the regions of Bretagne in France, and from the Basque country and Galicia in Spain. The Agreement sustains a substantial downstream employment in processing, but this is distributed between ACP and EU countries. No employment is sustained in relation to the surface longline and shrimp trawl fishing opportunities, although an estimated 208 persons are employed on board the average of 12 longliners which take out licences under the Agreement.

What effect has the Agreement with Mozambique had on the stabilisation of the Community market?

The Community market has benefited from supplies of tuna totalling 12,060 tonnes in 2004, valued at M€9.3. This has declined in 2005, to an estimated 5,446 tonnes valued at M€4.2. Assuming a supply of tuna for the EU market to be in the region of 800,000 tonnes per annum, the average supplies subject to the Agreement account for a about 1.1% of the EU tuna market. Overall impact of supplies to the Community market is therefore limited.

What impact has the Agreement had on development of the Mozambique fishery sector?

- The Community vessels' activities have been confined to offshore fisheries for large pelagic fish, and EU vessels operating under the Agreement have not routinely entered Mozambique ports. Development of shore based service facilities as a result of the Agreement has been limited. However one shipyard is targeting services at the tuna sector, and agency services have acquired limited additional business under the Agreement.
- Upgrading of a shipyard to offer services to tuna vessels is the only shore based investment linked to the Agreement. Although Mozambique has complied with EU sanitary requirements for fishery products, potential for investment in onshore downstream facilities to receive, process and market catch is handicapped by the relatively low volume of catch in the EEZ and lack of a stable investment climate for business. In this respect also the Agreement has had little impact on the fishery sector.
- No Mozambican fishers or observers are employed on vessels fishing under the Agreement, therefore there is no resulting professional development or transfer of skills beneficial to the fishery sector.
- The Community will have contributed up to M€12.3 over the 3 years of the Agreement (comprising the compensation linked to targeted actions under the 1<sup>st</sup> Protocol). This has been focused on measures in favour of the Mozambique fisheries sector. This is intended to provide investment and operating costs for a range of important measures related to strengthening fisheries institutions, improved fish export controls, fisheries research, fisheries MCS activities, QC, small-scale fisheries and training. However only 42% of the funds allocated in 2004 were applied to the measures identified in the Agreement, and there is no information regarding the utilisation of the balance of the funds.

How does an Agreement with Mozambique contribute to the development of responsible fisheries?

- The Agreement provides for a modification of the fishing opportunities should conservation and protection measures be required to maintain sustainable levels of exploitation of the Mozambican fishery resources. Catches of fish by EU vessels have been within sustainable limits and no such modification has been required.
- Targeted actions funded under Agreement include support for activities related to fisheries research and monitoring control and surveillance. These have potential to contribute significantly to the development of responsible fisheries by the GoM. However, in these areas the utilisation of the 2004 funds available was 60% and 16% respectively. The main contributions have been in relation to the development of mobility of fisheries officers and a provincial presence of the Fisheries Research Institute, permitting improvements in reach and quality of catch and other data for fisheries research and statistics. The impact of the agreement on improved MCS is limited, due to the poor utilisation of funds, the lack of any decision regarding investment in a patrol vessel, and the continued absence of an effective observer programme.
- There is a failure on the part of the EU purse seine and surface longline fleet to properly communicate catch declarations directly to the Mozambique authorities, as required by the Agreement. Catch declarations are submitted, but only after review by Member States. The Mozambique authorities have failed to act against vessels that have not complied requirements in relation to catch and EEZ entry/exit declarations.
- The Agreement has provided a means by which EU vessels fishing in the Mozambique EEZ can be clearly subjected to the management measures recommended by the IOTC. In the absence of the Agreement and in the case of Mozambique's continued non-membership of the IOTC, the application of such measures to EU vessels operating under private arrangements could become untenable.

Do the conditions of utilisation as outlined for the financial arrangements favour the development of the Mozambique fishery sector?

- Only one report (for 2004) on the support measures funded by the Agreement has been submitted.
- The Government of Mozambique benefits from the fisheries compensation, which has provided a significant proportion (16%) of revenues for of the budget of the Ministry of Fisheries and its associated institutions.
- These activities have had an impact on the functioning of the fisheries administration, by providing approximately 16% of the combined operational and investment budget for public fisheries activities. However only 42% of the 2004 funds were employed. There is no information on the 2005 utilisation. In all cases 5% of the compensation under the agreement are consumed as administrative overheads for the Fisheries Development Fund.
- The main impacts on the fishery sector are in relation to improved fisheries research and statistics, institutional strengthening of the MoF and quality control. However, the efficient use of these funds has been compromised by the lack of a clear policy framework for fisheries, weak linkages between budgets and policy, and poor financial controls and accountability. These weaknesses severely limit the potential for the partner country to benefit from the support measures under the Agreement.

### 3.11.2 *Efficiency*

Is the cost of the Agreement negotiated of advantage to the EC?

- The average annual cost to the Community over the course of the first two years of the first protocol is €4.2 million (comprising compensation and payments in respect of additional catches). In return the Agreement has generated a Community direct value added of €4.2 million in 2004, and an estimated €1.8 million in 2005, and supplies of fish valued at €9.3 million to the EU market in 2004 and €4.2 million in 2005 (with an average of €6.8 million). An estimated 55 Community jobs are sustained by the Agreement.
- Considering the total payments and value added generated to date to date, for every €1 spent by the EC, the benefit is estimated to be €0.7. These benefits include value-added to the EC catching sector (profits and wages). Some upstream (suppliers) and downstream benefits (processing) are also generated, but they are not possible to attribute between the Community and ACP partners; in total they did not exceed €1.5 million in 2004 and €0.6 million in 2005.
- Based on value for money, the conclusion is that for the years 2004 and 2005, the Community has paid 43% more than the total direct and indirect value-added benefits accumulating to the Community fishery sector (including up- and down-stream activities). The cost of the Agreement does not appear to have been advantageous to the Community.

What are the advantages from the Agreement to the Community fleet?

- The Agreement has sustained some traditional fishing opportunities for European distant water interests by supporting the cost of fisheries access to the benefit of the EU fishery sector.
- The take up rate of the licences for the tuna purse seine fleet has been maintained at a 100%, drawn by both Spanish and French vessels. Therefore without the Agreement, the fishing opportunities for approximately 35 tuna purse seine vessels operating in the Indian Ocean could have been constrained. However it is doubtful whether the viability of the vessels would have compromised since they have proven willing to purchase private licences in the past, Furthermore the presence of this fleet segment in the Mozambique EEZ is relatively modest, being 4.6% in 2004 (considered by the industry to be an exceptional year) and 2.1% in 2005.
- The uptake of the surface longline opportunities is good (71% overall) with licences drawn by 12 Portuguese and Spanish (but not French) surface longline vessels. These opportunities have not been exploited by the vessels concerned, creating a negative return on the Community and private funds invested. However it is clear that the Agreement complements their regional fishing strategies as indicated by the continuing licence uptake, even in the absence of any yields from this segment to date
- The fisheries access opportunities in the deepwater shrimp segment, which accounts for some 85% of the Community cost of the Agreement, are not utilised. The Agreement therefore provides no advantages to the EU trawl fleet.

What are the advantages from the Agreement to Community fishers?

- The Agreement supports fishing companies and jobs in the traditional fishing and fish processing communities of Vigo, and the Basque Country (ESP), Concarneau (FR), and Aveiro and Peniche (PT).

What are the advantages from the Agreement to the partner country?

- The national GDP of Mozambique in 2004 is estimated to be €4.9 billion<sup>54</sup>. The benefits to Mozambique from the FA, in the form of compensation, licence fees and target actions accounts for €4.6m in 2004. The Agreement therefore has contributed approximately 0.1% of the national GDP. The financial compensation from the FPA is applied to the fishery sector, but apart from the licence fees generated, produces no additional added value.
- The financial benefits to Mozambique in 2004 have accounted for about 50% of the annual first sale value (€9.3 million) of the fishery products generated by the Agreement, corresponding to €385 of the €771/tonne value at first sale. This benefit level compares with 30% in Agreements with Guinea Bissau, 67% with Angola, 35% with Cape Verde and 17% with São Tomé and Príncipe.
- As a result of the absence of significant development of vessel supply services, landings, shore based processing, and any employment in fishing and up- and downstream activities, almost all the fisheries activity added-value generated by the Agreement falls outside Mozambique, which has not gained any advantages from the Agreement other than the financial compensation and licence fees.
- The Agreement has contributed an estimated 16% of the annual operating and investment budget of the Ministry of Fisheries. However the partner country was not been able to deploy more than 42% of the available funds in 2004. The impact of those funds which have been deployed is not established, since the measures implemented cannot be entirely linked to a clear policy framework. At least 5% of the targeted action funds are allocated to activities other than those specified in the Agreement. Mozambique has not gained the maximum advantages possible from the Agreement.

### 3.11.3 *Relevance and Strategic issues*

Does the Agreement with Mozambique satisfy the various needs of the different interest groups in the Community?

- The security of access provided by the Agreement has created a basis for the continued viability for some of the EU distant water fisheries, particularly the tuna purse seine sector, and surface longline operators targeting shark and swordfish. Although neither fleet has exhibited high levels of dependency in terms of actual fishing patterns (in 2004 this was 4.6% and 0% respectively), the access provided is commensurate with the regional fishing strategies pursued by these segments. The licence utilisation pattern therefore suggests that the Agreement has met the requirements of the EU fishery sector in terms of tuna purse seiners and surface long-liners.
- The Agreement does not satisfy the needs of the EU shrimp trawl sector, largely due to the limited marketability of the species of deepwater shrimp concerned, and the elevated costs of exploitation of this resource, rendering its utilisation by EU vessels unprofitable.

<sup>54</sup> World Development Indicators database, World Bank, 15 July 2005

Does the Agreement with Mozambique satisfy the various needs of the different interest groups in the partner country?

- Mozambique does not have the capacity to exploit purse seine and longline fisheries on its own account. There is only partial utilisation by national and regional interests of the deepwater shrimp fishery. The Agreement has therefore met the requirements of the Government of Mozambique to generate additional rents from fishery resources which are not exploited or are under-exploited by national interests.
- Given the structural inadequacies of the Mozambican fishery sector, the rent is significantly higher than it would be were there to be no Agreement, under current conditions. The terms of access to the tuna resource (€100/tonne) are significantly more favourable than private access arrangements (€50.8/tonne) that the partner country is able to negotiate for these resources.
- However, the Agreement has not been successful in promoting the increased participation of the partner country in the fishery sector, largely because of the weak policy environment for fisheries development, lack of implementation capacity and weak fishery sector governance.
- As a result the Agreement has had little significant impact on the Mozambican fishery sector, neither on employment nor supplies to market. Whilst fish is has some importance for food security in some regions, the contribution of the Agreement to this is nil.

#### 3.11.4 *Sustainability*

Does the Agreement with Mozambique assure the viability of Community fishers?

By supporting the cost of access the Agreement has contributed towards the continued viability of the Spanish, French and Portuguese distant water fishers in tuna purse seine and surface longline sectors. The loss of the Agreement could prejudice the viability of some elements of these fleets. However, in the past the purse seine vessel owners in particular have proven a capacity and willingness to negotiate private licences with the Government of Mozambique. The Agreement has not contributed to the viability of other Community fleet segments.

Does the Agreement with Mozambique ensure the viability of the fishery sector in Mozambique?

Only 42% of the targeted action funding was employed in 2004. The targeted action funding has not been applied within a well defined programme of support measures based on clear and prioritised policy objectives. Whilst it has contributed to some limited improvements in fisheries research and quality control for exports, the Agreement does not so far appear to have contributed significantly to ensuring the viability of the Mozambican fishery sector.

What risks are there to environmental sustainability as a result of the Agreement?

- Mozambique is not a member of the IOTC, and is not obliged to implement IOTC management recommendations for relevant stocks, which include tunas, swordfish and sharks. The EU/MOZ Fisheries Agreement ensured that the exploitation of these EEZ resources by EU vessels is clearly within the frame of the IOTC management recommendations, and has clearly resulted in improvements in catch reporting, thus improving conditions for responsible fishing in the region.
- Purse seine fishing opportunities for tunas are pursued in the Mozambican EEZ with catches corresponding to 4.6% of the annual Indian Ocean catch of 35 EU vessels in 2004. Compared to the regional exploitation of the target tuna resources, the Mozambique EEZ has contributed an average of 0.5% of the total catch of tuna in the Indian Ocean. Whilst there is some concern regarding the sustainability of the bigeye tunas caught in association with fishing for skipjack tuna with FADs, the contribution of the Agreement to regional catches of this species may be considered *de minimis*. The overall impact of the Agreement on the sustainability of tuna stocks may therefore be considered as negligible.
- Surface longline vessels drawing licences under the Agreement target swordfish and several species of shark, and do not target any species of tuna species, as implied under the 1<sup>st</sup> Protocol.
- The IOTC has expressed concern that swordfish stocks in the southwest Indian Ocean may be subject to localised depletion, and that exploitation levels for several shark resources may not be sustainable. However, there is a lack of data on the precise status of these resources. Measures have been introduced to ensure improved reporting of shark catches.
- Several species of endangered and critically endangered turtle have been identified in the Mozambique EEZ. Based on evidence from similar fisheries elsewhere, it is highly probable that there is an interaction between turtles and EU surface long-line vessel operating in the region. However due to lack of adequate catch and bycatch data, the nature and extent of these interactions, and their effect on sustainability, have not been assessed.
- Since surface longline fishing opportunities have not been utilised within the EEZ, the Agreement has had no direct impact on the sustainability of target stocks of swordfish, shark and non-target impacts on turtle stocks. However the Agreement has contributed, albeit indirectly, to the regional presence and impacts of the EU SLL vessels

### 3.11.5 Policy Coherence

**With respect to the Common Fisheries Policy:** the activities conducted under the auspices of the EU Mozambique Fisheries Agreement raise some areas of concern with respect to compliance with principles of responsible fisheries management, as expressed within the Common Fisheries Policy.

There is concern regarding the lack of compliance and enforcement regarding catch reporting and EEZ entry/exit reporting by EU vessels. With respect to surface longline opportunities, the Agreement does not address concerns regarding the possible impacts on target stocks of swordfish and shark. Neither are potential impacts on endangered turtle populations addressed.

The partner country is not a Member of the Indian Ocean Tuna Commission. Mozambique therefore is not party to IOTC information, and does not participate in research or decision making on conservation of resources in which it has a strategic interest. Furthermore the partner country is not bound by any of the regional management recommendations regarding migratory stocks of tuna, swordfish and shark, which are exploited in the Mozambique EEZ by both the EU fleet and fleets of other third countries. Whilst the



EU is so bound, the situation could give rise to conflict and a lack of coherence in the fishing opportunities subject to the Agreement.

The partner country's fisheries policy framework and fisheries management system is only weakly developed, especially with respect to the monitoring control and surveillance of offshore fisheries. The lack of any effective fishery patrol capacity is of particular concern. There is no observer programme to ensure compliance with fisheries regulations and to gather scientific information for fisheries management decision making. Whilst the programme of targeted actions is designed *inter alia* to address these deficiencies, it is clear that a lack of a sound policy framework and implementation capacity severely compromise the potential contribution of the Agreement to responsible fishing.

***With respect to EU and partner country development policy:*** under the Cotonou Convention, the National Indicative Programme will provide €274 million (Envelope A) and € 55 million (Envelope B) from the 9<sup>th</sup> EDF (2002-2007) directed at macro-financial support, food-security, agriculture and transport and infrastructure. Whilst the 9<sup>th</sup> EDF does not directly address fishery sector development, indirectly the focal sectors of transport infrastructure (Integrated Road Sector Strategy) and macroeconomic support will also contribute to the development of the fisheries sector. Both focal sectors will support trade policy and reform to the investment climate. The 9<sup>th</sup> EDF includes the "Investment Facility" as a financing instrument managed by the European Investment Bank, although this does not form part of the Indicative Programme. Whilst there is good coherence between the NIP objectives and the FPA objectives, the measures could be better coordinated to ensure a greater level of additionality, particularly in relation to trade integration for small scale fisheries.

***Regional development policy*** includes support for improved management of regional fishery resources, principally through the SADC Fisheries MCS project which closes in 2006. This project has objectives which are highly coherent with the FPA. However the weak implementation capacity of the partner government has meant missed opportunities for enhanced leverage of the technical assistance and training activities of this project with investments under the FPA.

***With respect to trade policy:*** the European Community and SADC, of which Mozambique is a member, are progressing towards the conclusion of an Economic Partnership Agreement, expected to be introduced in 2008. The trade development objective of the EPA is coherent with the FPA objectives for closer economic cooperation in the fishing industry. However the EPA can only deliver positive benefits in relation to the fishery sector if Mozambique is successful in ensuring ongoing sustainable exploitation of fishery resources, and associated development of the onshore fishery sector. The Community's financial contribution under the FPA includes compensation for access and support for measures to assist the development of the fishery sector. The support measures have focused on key issues of fishery research, sanitary controls for exported fishery products and improvements to the fisheries MCS system. These are considered to be highly appropriate to the needs of the partner country, and fully in line with Community development policies in relation to both the National Indicative Programme and a future European Partnership Agreement. However, their eventual achievement is compromised by the ongoing weak framework for fisheries policy formation and implementation.

### 3.11.6 Risks

The main risk associated with the future of the EU Mozambique Fisheries Agreement FPA is related to the viability of the Agreement with respect to the deepwater shrimp fishery resource. The indications are that these opportunities will remain unused by EU vessel owners due to the structurally weak economic conditions associated with the exploitation of this resource. The inclusion of this resource within the terms of any future Fisheries Partnership Agreement would therefore undermine economic efficiency and the value for money. However, the removal of the deepwater shrimp from the Agreement will eliminate a considerable portion of the value to the Mozambique. The contribution of the Agreement would fall from

an estimated 16% of the Ministry of Fisheries Budget to about 3%, thus reducing the potential interest in a future Agreement.

With respect to the tuna purse seine elements, the Agreement has proven to be highly feasible, and has served the needs of both the Community and the partner country. However, the evaluation is based only on actual catches in 2004 and assumed catches for 2005. There is a high degree of variability in the migratory patterns for tuna and there is a clear risk that in future the Agreement may not perform to the same degree in meeting the needs of the partners.

With respect to the surface longline fishery, the Agreement appears to satisfy the regional fishing strategies of the EU vessel owners by providing potential fishing opportunities, even if they are not utilised. There are some uncertainties regarding the sustainability of the target species of swordfish and shark, and regarding bycatch of turtles, but more information is required before specific conservation measures can be recommended.

## 4 CONCLUSIONS AND RECOMMENDATIONS

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### 4.1 CONCLUSIONS

The current protocol, which is the 1<sup>st</sup> since the renewal of the Fisheries Agreement between the EU and Mozambique in 2004, has been **effective** in providing fishing opportunities for an average of 35 EU purse seiners, and 12 surface longline vessels. The Agreement has ensured employment for an estimated 55 persons in the Community, and has provided supplies to the EU market averaging an estimated 8,753 tonnes/year, valued at €6.7 million (although this value is likely to have fallen during the later years of the Protocol). The Agreement has sustained about 14 Community jobs and 38 in ACP countries (but not Mozambique). The Agreement has not been effective in providing fishing opportunities for the EU trawl fleet. It has not been effective in enhancing supplies of fish to Mozambique. Neither has it been effective in stimulating the development of the Mozambique fishery sector due to the failure of the policy framework to address the lack of linkages with the EU fleet activity (such as up- and downstream investments). In terms of the contribution to responsible fishing, the Agreement has ensured that fishing effort by EU vessels is pursued at a sustainable level, and in line with the conservation measures recommended by the IOTC. However, sustainability is mitigated by the lack of enforcement of landing declaration provisions by the partner country.

The Agreement was efficient in providing usable fishing opportunities for the tuna purse seine sector, where effectively 100% of the opportunities have been utilised. Apart from allocations to France, the uptake of licences by the surface longline sector has been high (83%) and even though these vessels have not fished in the EEZ, the provision of licences has met the commercial requirements of the vessel operators. In respect of shrimp trawlers the Agreement has provided fishing opportunities which were not utilised at all. In general, licence fees paid by vessels amounted to an average of 3.5% of the catch value generated. Therefore in terms of **efficiency**, the cost to the European Community averaged €4.2 million/year, benefits of €3.0 million were delivered, suggesting a net cost of €1.2 million /year, providing a cost advantage of 0.7. In this respect the Agreement may be regarded as having negative efficiency. Of the income provided to Mozambique, 94.7% was provided by public funds, and 5.3% from the vessel owners, in the form of licence fees. The compensation funds under the Agreement have not been effectively applied to the optimal benefit of the sector development, due to a lack of clear strategic and budgetary planning capacity, and weak financial auditing procedures.

In terms of **relevance**, the Agreement has satisfied the needs of EU vessel owners for access to fisheries resources of tuna and large pelagic fish. The Agreement appears to have little relevance in relation to deepwater shrimp, where there is a negligible uptake of licence opportunities due to the limited marketability of the shrimp species concerned. In terms of the Government of Mozambique, the Agreement has satisfied an important need for revenues to support approximately 16% of the annual operational and investment budget for the fishery sector activities. The funds have been directed at highly relevant investments in relation to MCS, fisheries research, institutional development, training and quality control. However, only 42% of the 2004 budget was deployed, and the relevance of the expenditures made has been compromised by the weak fisheries policy framework and implementation capacity.

The contribution of the Agreement to the **viability** of the Community fisheries sector is moderate in relation to EU purse seine vessels targeting tuna resources of the Indian Ocean. Here the FA contributes towards the continued viability of the 35 Spanish and French vessels, where the Agreement contributed 4.6% of catches in 2004, although this fell to an estimated 2.1% in 2005. With respect to the surface longline vessels, the Agreement has not contributed to the viability of the EU fleet since no fishing has taken place. However indications are that this may in fact change in 2006 with Spanish and Portuguese vessels indicating an increased interest. The agreement therefore meets the needs of fisheries dependent regions in Vigo, and the Basque Country (ESP), Aveiro and Peniche (PT), and Concarneau (FR). However the agreement does not contribute at all to the viability of the EU trawl fleet and the removal of opportunities directed at this sectors would not have a significant impact on viability. The Agreement does

not contribute to the viability of the Mozambique fishery sector. There are no value added or other benefits generated except for the compensation and the licence fees. No Mozambican jobs are associated with the Agreement.

With regard to sustainability, the Contribution of the Agreement to responsible fisheries, the relatively low catches, in terms of tuna and large pelagic resources, means that the Agreement has negligible impacts on these stocks. Compared to the regional exploitation of the target tuna resources, the Mozambique EEZ has contributed an average of 0.5% of the total catch of tuna in the Indian Ocean. Whilst there is some concern regarding the sustainability of the bigeye tunas caught in association with fishing for skipjack tuna with FADs, the contribution of the Agreement to regional catches of this species may be considered *de minimis*. The overall impact of the Agreement on the sustainability of tuna stocks may therefore be considered as negligible. Since there have been no EEZ activities relating to surface longliners, the Agreement has not impacted on the condition of swordfish and shark stocks, about which the IOTC has expressed some concerns. Similarly there have been no impacts on mortality of several endangered species of marine turtle, associated with the Mozambican EEZ. However, the Agreement has contributed indirectly to the regional presence of these vessels and there may be some such interactions if these opportunities are exploited during the remaining duration of the Protocol

There is evidence of widespread non-compliance with the Agreement's catch declaration requirements by EU purse seine vessels. The partner country has failed to enforce these provisions. Sustainability in the exploitation of the tuna and large pelagic resources under the Agreement is promoted by the Community membership of the IOTC, ensuring that management recommendations are implemented with respect to EU vessel fishing under the Agreement. However, Mozambique's non-participation in this organisation reduces opportunities for scientific research, catch reporting and information sharing, and limits potential for further application of principles of responsible fishing should the Agreement not be renewed. Whilst the Agreement has supported targeted actions directed at fisheries research and fisheries MCS, partner country capacity in these areas remains weak. There are effectively no fisheries management plans in place other than for shrimp. Despite the support of the targeted action funds and the EDF SADC MCS Project for the development of MCS capacity, Mozambique still has no effective surface MCS means, undermining the future sustainable exploitation of EEZ resources.

In conclusion, although neither the Community nor the partner country can be regarded as having gained the optimal benefits potentially available from the first protocol under the Agreement, the political and economic interests of both parties have been positively served. The Agreement should therefore be viewed as a coherent measure for establishing mutually beneficial fishing activities within the Mozambique EEZ. The Agreement has not been implemented efficiently, due mainly to the inclusion of unutilised shrimp fishing opportunities, and the ineffective application of targeted action funds. The Agreement has been relevant for some, but not all, of the fleet segments represented. The investment has not generated an overall economic advantage to the Community. The Agreement has been highly relevant to the needs of the partner country. However the considerable potential benefits to Mozambique have been compromised to an extent by the lack of a clear fisheries policy framework, and associated implementation capacity. The Agreement is relevant and coherent with Community policies in relation to fisheries (in relation to the CFP), development (in relation to the Cotonou Agreement, and EDF regional projects supported by the RIP and NIP) and trade in relation to a future SADC European Partnership Agreement.

In terms of the potential for the future renewal of the Agreement, the renewal of the Agreement appears to be in the mutual interests of both the European Community and the partner country. However it is clear that a number of key issues need to be considered by the parties. These are summarised in the following Table 67.

Table 60: Main issues to be addressed concerning the renewal of the EU-Mozambique Fisheries Partnership Agreement

Ex Ante Evaluation Criteria	Main points for consideration
Needs to be met	<p><i>Short term</i></p> <p>Mozambique: Funds to support operating costs and investment in fishery sector</p> <p>Strengthened fishery policy framework and implementation capacity</p> <p>Improved budgetary expenditure framework and accountability</p> <p>EU: Generation of sustainable fishing opportunities for EU fleet</p> <p><i>Long term</i></p> <p>Mozambique: Development of a sustainable national fisheries sector including fishing, and up- and downstream activities</p> <p>EU: Maintaining social and economic stability in fishery dependent regions of the EU</p>
Objectives to be achieved	<p>Sustainable management of fishing effort applied to the fishery resources in the Mozambique EEZ.</p> <p>More sustainable Mozambique livelihoods and food security from increased national fisheries activity</p>
Results expected	<p>Renewal of the FPA, with retention of financial compensation in line with fishing opportunities provided.</p> <p>Elimination of the fishing opportunities for shrimp resources from the Agreement</p> <p>Strengthened fisheries policy framework and implementation capacity, especially for fisheries management and MCS activities.</p> <p>IOTC Membership for Mozambique</p>
Added value of Community involvement	<p>In the short term ensures adherence to principles of responsible fishing through EC membership of the IOTC.</p> <p>In the longer term strengthens capacity of Mozambican institutions for effective and efficient management of the national fishery sector.</p> <p>Potential for the Agreement to achieve leverage of EDF funds allocated to SADC MCS project by supporting national investments in MCS means and ACP Fish II in future</p>

Ex Ante Evaluation Criteria	Main points for consideration
Risks	<p>Lack of budgetary planning and implementation capacity undermines effectiveness of expenditures made.</p> <p>Partner country lack of participation in regional fishing organisations undermines responsible utilisation of EEZ resources, especially in relation to licences granted to vessels from non-contracting partners</p>
Lessons learned from the past	<p>An effective fisheries policy and associated development of a Mid-Term Expenditure Framework for fisheries sector measures is a precondition for effective support measures under the Agreement.</p> <p>Partner country has limited capacity for formulation of scientifically based fisheries management plans</p> <p>Partner country has weak capacity for MCS activities</p> <p>Sustainable fisheries within the FPA is undermined by lack of compliance by EU vessels with catch declaration and entry/exit notice requirements</p> <p>Catch reporting requirements EU surface longliners fishing under the Agreement do not reflect regional target and bycatch species and information requirements for responsible fisheries</p>
Monitoring system	<p><i>Objectively verifiable indicators:</i></p> <p>To be determined on conclusion of any future protocol</p> <p><i>Monitoring arrangements:</i></p> <p>To be determined on conclusion of any future protocol</p>

